

The Commercial Car Journal

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A PROMISE or an ORDER— WHICH SHALL IT BE?

There is But One Real Recipe to Counteract the
Friendly "Come-Around-Next-Week" Promise,

AND THAT IS:

"SIGN here, NOW!"

The hardest sentence in the whole sales talk for the average salesman to get out of his system.

Up to this point many salesmen are whirlwinds—they're convincing, they know their truck and they "do their stuff" as it should be done.

And then they reach this most important place, and they're tongue-tied, deaf and dumb and filled with stage fright!

"You'll get the order all right, old Man," says the truck prospect, "but I'm not quite ready to sign up yet. Come around some time next week."

And the salesman, serene in the thought that he has made another sale, shoves a cigar at his customer, thanks him vigorously and swings off up the street whistling "I'd Love to Fall Asleep and Wake Up in My Mammy's Arms."

Well, he doesn't know it, but he's already fallen asleep, and when he wakes up "next week" he'll find that the salesman for some other truck company has been around to see his you'll-get-the-order friend. And that other salesman knew just when and how to say:

"Sign right here, NOW!"

And THAT fellow got the order.

Not so long ago I was talking with the general sales manager of one of the big truck companies, and this subject of "closing sales" came up.

"Do you know," said this manager of truck salesmen, "the thing that many otherwise good truck salesmen lack, and it is a very serious lack indeed, is the ability to know just when to taper off their sales talk and to firmly but pleasantly insist upon their prospect putting his name down on the dotted line and coming across with the initial deposit.



SIGN RIGHT HERE, NOW!

By A. V. COMINGS

"I use every opportunity I can get to drill this into our salesmen, that there comes the time in every sale when it is time to CLOSE, and then is the time to get that name on the contract. Time and again I have gone out with salesmen who have brought a prospect up to the closing point, but who have not seemed able to put it across. And usually it takes only a few moments of hard, concentrated effort, to get the prospect into the frame of mind where he is willing to sign, and to get his name on the contract.

"I was calling on one of our dealers a short time ago in one of our best territories, and along about 5.30 a salesman came in who had been working hard on a man who was going to buy a truck.

"Well, did you get the order?" I asked.

"No, I didn't get his signed order, but he said he would give it to me in a few days. He isn't quite ready to sign yet," he answered.

"Well, that didn't listen good to me, so we got into his car and went right back to see that prospect. In half an hour we had convinced him that the time to buy that truck was right then, and he signed

the order and made his deposit. And we were back in the home office by 6.30, with an order instead of a promise.

"Now that salesman could just as well have had that order when he first came in if he had just had the confidence to have insisted upon that man signing the order. The man was ready, only he needed a little urging. I believe that that salesman will not let it happen again, for he sees how really easy it is, when you get the prospect up to the right point.

"Another case didn't turn out so well. The salesman

came in with the usual cocky air of a man who has made a sale, and when we asked him about it, he said the man promised him the order in just a month. Well, it happened in that case that we knew before the salesman just what was going on, and I said to him:

"What would you say if I should tell you that your 'prospect' has already purchased a Blank truck?"

"Naturally the salesman found it hard to believe, but it was a fact that he had dallied along with that live prospect so long without asking him to sign the order, that he had lost it and the man put him off for a month just to get rid of him."

Sales managers in any line of business will tell you that they have many men who seem all right up to the closing point, and then they fail. In selling motor trucks the fault is just as fatal as in any other sales work, and the dealer who takes his salesmen in hand and coaches them in this very important part of their sales work will find orders coming in more frequently than the man who lets his salesmen drift.

Do You Have to

Drag the Customer Into Your Service Station?

If Your Service Department is Not Doing the Business You Think It Should, Isn't It High Time That You Find Out the Reasons?

By C. P. SHATTUCK

TWO service station managers were talking shop following a meeting of a service association in a large city and one of the subjects discussed was service selling. "It is all right," said one, to preach selling service and I'm strong for it, but while these passenger car chaps may do it, I'd like to see them tackle the hard boiled eggs we have. I got the bee to sell service at one of these meetings. I thought it would be a fine plan to start in our service station. Got real peppy. Saw visions of long strings of trucks battling to have work done. Yes sir, I was enthusiastic. But—it is a fine theory, but it won't work out in practice. I know, I've tried it."

It developed that this service head could not sell his customers. They absolutely refused to have any work done until actually necessary. Wouldn't even come to service station unless broken down, a case of must. To hear that service manager roast his customers, one would obtain the impression that truck owners stopped spending money after the purchase and only expended money for repairs under hydraulic pressure. And the singular feature was that the other truck service head agreed with him.

Are these two cases exceptional? Apparently not, judging from the remarks of some service heads on conditions existing during the past six months. There is no denying the fact that business has been quiet with the average truck service stations the last winter.

Drives, campaigns, educational literature to bring the business into the service station during the cold weather have only been partially successful at the best. It

may be argued that the truck differs from the passenger car, that a business unit functions 52 weeks the year. And so it does under normal conditions, but when the business man starts to retrench he includes his transportation units in the general cut. This may appear pessimistic

service station consideration and look upon it as a **business investment from which he may reasonably expect at least six per cent net on his money.** Oh, yes, it can be done, Mr. Dealer. If a dealer in the largest city in the country, and where competition is as keen as the surgeon's scalpel, can

turn a big loss in service into a good profit and sell more trucks as a result of business service policies, any dealer with courage can do likewise.

Dealer Lacks the Proper Interest

The great trouble with the average dealer who complains about his service department is due, the writer believes, to the fact that he is not interested, does not know or won't try to learn anything about the department other than the slips of paper the

bookkeeper hands him dealing with expenses. If more dealers would spend more time in the service station, display a little human interest, service would be lifted to a higher plane and the bank balance at end of the month or year would be some larger.

If the dealer has been guilty of not being able to rate his service department as he should so has the service head been at fault for not selling his employer on the value of service in sales.

Too many approach the executive on a mechanical basis whereas it should be on a business basis. How many times have the service heads been told, when asking for some equipment or tool, that the shop is a loss and why send good money after bad? If the service head is persistent likely as not the executive will ring for the accountant who will present a statement that will make him stagger. How differ-



Selling Service Properly Would Eliminate This

but it is the truth and why not look facts squarely in the face? The sooner we get down to brass tacks in this industry of ours the quicker we will set our feet on the highway to normal times. And the service manager and his department can be an important factor in getting the industry back to its stride.

Place Service on a Business Basis

To hear some dealers comment on their service stations would lead the hearer to believe that they were in effect worse than the smallpox. And to ask some dealers if their service stations are profitable is like waving a red rag before a bull. Others are content if they break even and some believe they should charge off goodly sums against the service foolishly thinking that free, gift service pleases owners.

Right now the dealer must give his

ent it is if the salesmen ask for some appropriation which they believe will increase sales or aid them.

Sales Outrank Service, But—

There is just this difference, and it brings us to the crux of the story, and it is that **sales or distribution takes precedence over all other departments** in the average lines of endeavor.

How often has the remark been made by the salesman to the service manager, "We are the chaps that keep you in bread and butter." Oh, yes, the despised have a come-back but unfortunately it does not register for it is not a close-up. It is a picture taken with a telescopic lens.

Now, after all of this preamble, the setting forth of conditions and facts which are an old story to the service head and his men, what is the remedy? What can be done to improve conditions and bring about better business relations between the customer and the service station, the service manager and the dealer, the dealer and the factory? The remedy appears to the writer to be very simple. **It is selling.**

Must Get Down to Brass Tacks

The service station must sell the customer a clean cut service policy and **give the customer full value for his money.** The service head must sell his employer a service policy that will return the latter a profit on his investment and **build satisfied customers who will buy with little sales effort and sell their friends.** The dealer must quit fighting the factory over minor points and endeavor to **sell the factory on service co-operation.** In other words the customer, service manager, dealer and factory must sit around the table and get down to brass tacks instead of the policies which exist today. And the customer must be given unusual consideration in the conference for after all he is the meal ticket of the factory, dealer and service manager.

But before the customer is sold the dealer and service head must devise a real service policy, one that is clean cut, free from jokers and sufficiently clearly worded that "policy adjustments" will be scarce as hens' teeth. Before the conference the service head should analyze himself, his men, departments, overhead, losses due to sales policies, parts, equipment, tools, etc., and above all be able to show the dealer in terms of dollars and cents all points discussed. Charges against the service station should be carefully analyzed. Many a service head runs against the stone wall on the service charges vs. sales expense. The service manager must do some selling to convince the dealer that although the money comes out of one pocket it frequently does not go into the pocket of the service department. What is needed in the service stations is more active accountants.

Must First Sell the Executive

Furthermore, the service head must sell the dealer the fact that service costs must come down. To reduce costs to the owner does not mean reduction in wages, but rather increased efficiency, the lopping off of wasteful methods, of time consuming practices. The service head must be able to plug leaks in his department and

there are many in the average shop. The greatest leak is the performing of work by hand instead of employing time and labor-saving equipment.

Not Mechanics But a Sales Unit

The sales head must no longer think of himself in terms of mechanics or repairs, but rather as the most important gear in sales assembly. It means that the service head must study truck sales insofar as service applies, and bend his energies to reducing maintenance costs to the owner. There must be co-operation between the operating and sales departments.

After concluding upon a defined policy, and settling those details which have made for misunderstanding in the past, the next job is to sell the customer. And this is going to be the tougher job of the two.

Selling is not difficult if you have a good article, the price is right and you have the confidence of the prospect. How many of your customers accept your work, and bill, and make a pleased comment on the amount? If you are sure you function 100 per cent on all three you are to be congratulated. If you do, you are in the class with that truck maker's representative who in combatting the flat rate at a factory service convention said, "There is no need of a flat rate. We are opposed to it. If you give the customer 100 per cent value and he has a 100 per cent confidence in you, there is no need of any plan to convince him you are square with him."

The service manager who said he could not get his customers to come in unless in trouble did not look for the reason.

If the average owner hates to come to a service station why not find out his reasons and then proceed to remedy the cause. If we believe that it is the cost of the repairs, the unknown quantity that leads the owner to shun the service station, why not get down to brass tacks and see if the costs are unreasonable? It may be that the overhead is too great or the shop is carrying an expense that does not belong to it. But the great trouble is that the owner has not been sold right in maintenance and no effort has been made to bring down costs as they can be brought down by efficient methods, time and labor saving equipment and machinery.

Sales resistance to service, or maintenance, will be overcome when it is possible

to prove to the owner that he is receiving 100 per cent value and that anticipating work by virtue of minor adjustments and proper lubrication is the best kind of insurance. The great advantage of the flat rate is that the owner knows in advance what it will cost him. With the labor method he guesses and invariably his guess is wrong. And he gets peevish when the bill is received.

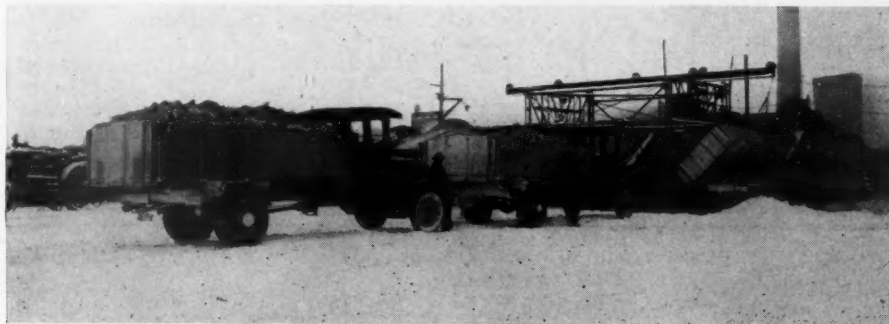
The dealer and service head will, eventually, have to sell the factory on service. Of course the factory believes in service by the dealer, but it has only taken the preliminary steps. There is the parts problem yet to be solved. Few factories are 100 per cent successful in selling the dealer, all dealers, on carrying an adequate supply of parts. Yet this problem must be worked to a practical solution.

Stop Throwing Brickbats

The dealer and service head must sell the factory on service by constructive suggestions. If the service head discovers, that by a slight change in design of a unit, that the cost of servicing can be reduced, let him discuss it in a man to man fashion rather than tell the factory representative when he calls that the engineer is a dub. The practical, actual contact with the customer and unit by the service manager plus the ability of the engineer will, if combined, attain results, and reduced costs to the owner and build for sales. But the service manager and engineer must stick their feet under the same table, not throw brickbats at one another. Both must sell each other.

In conclusion, the writer once more emphasizes the need of selling to place service on a high plane and reduce the costs to the owner. It must come, for new and old prospects are thinking seriously in terms of dollars and cents.

The cost of motor transportation, either expressed in terms of ton miles or package delivery can not be derived by figuring on the first cost of the unit, but rather on the cost **over a period of years or on a mileage basis.** Engineers may improve their design, manufacturers may reduce production costs and sell the truck at a very low figure, but **volume sales will not accrue if service costs, or maintenance costs are not reduced in proportion.** To bring this about will require an intensive sales campaign by all concerned.



Three and a Half Ton Transport Trucks With Special Body Equipment Employed by the Columbia Sugar Co., Mt. Pleasant, Mich. In Transporting Sugar Beet From Field to Factory

According to a statement given out by this company, trucks have distinguished themselves in the sugar industry as the most effective means of hauling beets from field to factory. These trucks, with the aid of a trailer, haul day in and day out throughout the entire harvesting period as high as seven and eight tons over all sorts of roads. Note the special crane arrangement at the right for raising the body sidewise, discharging the load into a hopper whence it is carried by a traveling apron into the factory.

How Legislation is Hampering Bus Progress in Oregon

Can the Industry Afford to Continue as the Tolerant Bystander and Disinterestedly Permit Other Interests to Transgress Rights That Should be Equal?

By RALPH J. STAEHLI, Secretary Automobile Dealers' Association, Portland, Oregon

HOW hasty and ill-conceived legislation may become the greatest obstacle to the development of bus and truck transportation, was brought to light at the first hearing called for by the Public Service Commission of Oregon, which, according to a law passed at a special session of the legislature, was given jurisdiction over the commercial use of the highways, along with the regulation of railways, gas and power companies, telephone companies, and other public utilities.

Shortly after the visit of prominent railroad officials and a rate war between the railroads and the buses over the Columbia River Highway between Portland and the seashore resorts, there arose from all over the state a cry against the truck and bus, as destroyers of highways and unfair competition with other common carriers. Had the railroads been able to kill off the buses through rail rate slashing—the railway putting on a fare of less than 25 per cent of the established price—nothing more probably would have been heard of it. However, the competition merely made business better for all concerned and the next move was a call for a special session of the legislature to draft laws to protect the highways from destruction by the common carriers.

It was called for a week before Christmas. A special committee appointed by the governor, went through the formality of having a public hearing, with their own bill already made up and in the hands of their constituents. On the score of limited time, those interested were given short notice when the bill was presented, and the legislators having killed the 1925 Exposition Bill and feeling that it was up to them to do something, passed the highway and bus bill, some of them admittedly without even reading it.

The hearing on March 16 was held before the chairman of the commission,

Charles E. Williams. The latter stated at the outset that the truck and bus owners should remember that the commission had nothing to do with drawing the bill and that the present regulation was thrown to the Public Service Commission in spite of the fact that they had their hands full and did not want it. The object of the meeting, he further explained, was to see if through co-operation the laws and regulations could be made less objectionable and yet achieve the results the legislators evidently had in mind.

The first subject of discussion was the

Special bus tax of \$4 per seat.
Special tire tax of 50 cents per inch of tire width.
Public Service permit tax of \$10.
Gasoline tax of two cents per gallon.
Then the following bonds and insurance:
Public Service Good Faith Bond, \$1000.
Liability Insurance or Bond, \$10,000.
Property Damage Indemnity, \$1,000.

While some of the largest bus lines would have found this about in keeping with the insurance they regularly carry, the small bus and truck were laboring under a staggering load.

In Eastern Oregon many counties have no railroad or at best only a few miles where a main line runs through the county. The freight and passenger service is entirely dependent on the truck and bus which has replaced the old stage coach that for half a century wheeled its ponderous way across the mountains, through canyons and over prairies of the great cattle and wheat country east of the Cascade mountains.

Many of the smaller lines run on a mail contract. Between that, a little freight and the occasional passenger the line is able to make all ends meet, but these operators saw no reason why, with the limited risks of their country they should come under all this load of taxes and bonds. The situation came to a climax when many of the lines announced that they would cease carrying passengers on a certain date, leaving the traveler through the country to fall back on the private car. In Western Oregon where a thousand miles of broad paved roads connect the more populace centers, the bus and truck was immediately established when the paving crew left, and are extended with the road-

building program. It is here that the great fight against them has been waged.

Railroad political clubs have been started in most of the cities and towns. These call upon the merchants and use every possible influence, first to have the mer-

These Are Facts!!

THE necessity for concerted action on the part of all commercial car interests is becoming more and more apparent each day. Although we learn of occasional spasmodic effort by various organizations throughout the country to combat derogatory state, city and borough legislative activity, the time is now ripe that this all-important problem be given national prominence. This can be accomplished only by whole-hearted co-operation.

It seems that when the element of ignorance does not enter into the creation of adverse legislation, ill-advised and harmful propaganda on the part of competitive interests does. Moreover, these competitive interests exhibit no scruples as to what unethical measures they pursue in an effort to further their ends. It is, therefore, obvious that the motor truck industry, in all its ramifications, combine—and combine now—to combat both ignorant and intentional adverse legislation.

An idea as to the vital necessity for immediate action is convincingly brought out in this article on truck and bus conditions in Oregon, where a system of transportation, both freight and passenger, has been developed until nearly a thousand buses and trucks are engaged in common carrier service.

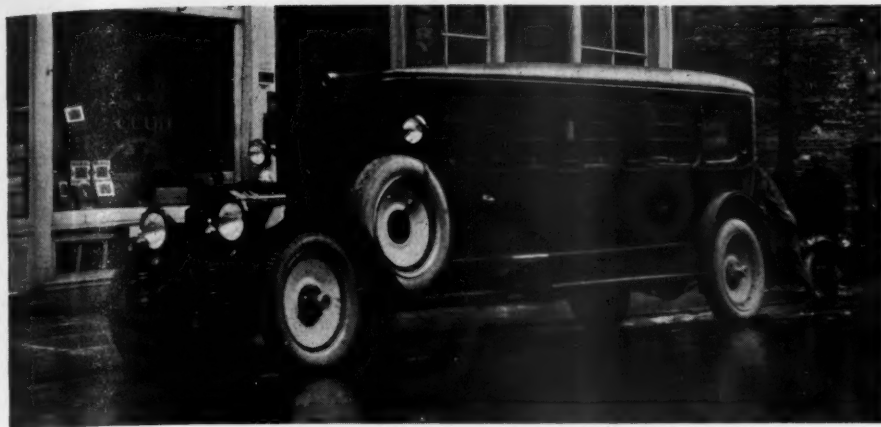
In this country with its limited railroad mileage and thousands of miles of paved roads, the bus, as a highway vehicle, has vast potentialities and will undoubtedly see great development, if unhampered and unrestricted in its natural growth by injurious regulation and laws. Despite the fact that a service is being provided for the populace of the interior, of a type not to be duplicated by any other agent should this service suddenly cease, there is still a great need to sell the public on the idea of motor transportation. This condition arises from the fact that the virulent one-sided propaganda of organized competitive interest has had full sway and has been unchallenged by honest motor transportation facts.

This has continued until at the present time a movement is on foot in Oregon to bar trucks from certain paved roads. Besides, other movements, showing a lack of understanding of the issues involved, indicate the need of a campaign by the builders, distributors and operators of these vehicles, that will sell their service to the public.

It is high time that cognizance be taken of the conditions by a well defined campaign to counteract these unconstitutional influences.

matter of insurance. Reading of the law indicates that the bus and truck, first is subject to the following license:

State Motor Vehicle License, on weight basis, which ranges in case of trucks from \$35 to \$150.



Showing One of the Buses That Render Hourly Service Between Portland and Salem, Oregon

chant confine his freight movements to the railroad, and secondly, to have high restrictive licenses placed on vehicles passing through or into the town, carrying freight or passengers. In one case, the truck is asked to pay \$300 per month merely to pass through the town.

Ignorance Knocks the Medium of Their Support

At the hearing it was pointed out that according to the law, the cities had the right to apply merely regulatory license fees. However, the cities had representatives present and announced that they would continue to levy these fees until their understanding of the law had been shown by courts to be wrong. The bus and truck interests are carrying these points through the Supreme Court.

To the state automobile merchants and students of motor transportation, the regrettable points in the present situation, is the evident fact that those who can be benefited most by the expansion and development of the passenger-carrying bus and the freight truck, are not sold on motor transportation as an entirely new mode of transportation, that takes up service where the railroads, in their program, have left off.

Through rapid organization of branches of the automotive trade in Oregon, including automobile merchants, accessory dealers, jobbers, truck men, haulers and in some cases, merchants and shippers, it is hoped to be able to effect before the next session of the state legislature a campaign which will effectively bring to the attention of the state, just what the possibilities of motor transportation are and what its fullest development can be to a commonwealth whose railroad transportation consists mainly of two lines, one crossing the state each way.

In spite of these handicaps, motor transportation has developed in Oregon with the coming of the thousands of miles of good paved roads, and comparison between the equipment used in the East and that used in the West indicates that for highway work and interurban transportation, the Westerners are surpassing the other sections in the development of better vehicles for this work.

The vehicle here must be comfortable, easy riding and able to hold its own when

traveling off the pavement, a necessary departure on some routes. Under those necessities, the bus rather than take after the small street car in arrangement, has patterned the railway pullman. The newest creations of Western body builders, are luxuriously equipped inside, with plush upholstery and all appointments of a standard limousine. The rear compartment in these buses—the smoking compartment—has nothing lacking found in the Pullman. The compartments for women passengers are equally well appointed. Such buses at present are being built to seat in comfort, 18 and 22 passengers.

In appearance they look like a great elongated limousine, which is essentially what they are.

Buses Render an Indispensable Service

These are today covering the pavement on a radius of 150 miles from Portland, with a longer route between Portland and Seattle under consideration if the commission in charge in Washington will grant the permit. This would be a run of approximately 185 miles, and estimated to take eight hours.

Between Portland and Salem, the state capital, hourly service with additional buses at certain times, is now maintained

over the 50 mile run. To the beach, on the Columbia River Highway, paralleling the Hill system railroad, hourly service is maintained in competition with three trains a day. This run is 130 miles and is made in six hours.

The service between Portland and its immediate suburbs is as yet limited. Due to the character of the city and its location, the suburban service is beset with some difficulties and the longer routes will probably remain for some time as the most important.

Washington, to the North, too, is having its problem of this new transportation, and like the quip of the stage comedian, doesn't know whether to "kiss it or kill it." It is now considering modification of its bills to embrace a tax of five per cent of the gross earnings of the bus lines.

Like in Oregon, the public there has not come to look upon motor transportation as a necessity, but merely a novelty that seems to offer dangerous precedent in the way of competition to railways, to which they arbitrarily grant certain rights, in spite of the fact that in days gone by half the choice land in Oregon and considerable in Washington was given to the railroads as an inducement to build their lines

Act Now and Commence to Educate

Automobile men and others, watching the struggle of the new industry, feel that the time has come for national action on the part of the leaders towards getting the public to take the right view of the bus and truck. Where it will start is problematical. Most effective probably would be an undertaking sponsored by the men who are furnishing the equipment to these lines. Nothing is harder to organize than a new group of business men or new industry, especially in a national way. The hope of active work starting from those in the field is therefore remote, even though the field could be brought to the support of any campaign which had its beginning in the ranks of the experienced and better versed builders of the equipment which these men are using and wearing out, and which they will use in ever increasing amounts.



Truck and Trailer Outfits Solve Big Worry of Business Firm by Making Long Trips

It is not an uncommon occurrence for San Francisco concerns to load their motor trucks with various commodities and send them on deliveries of hundred miles or more. Such performance is regularly exemplified by the Sperry Flour Co., San Francisco. "Sperry Service" includes a fleet of 5-ton Pierce Arrow trucks each of which is equipped with two 5-ton trailers carrying in the aggregate over fifteen tons of flour. This fleet makes regular runs to Madera, Merced, Visalia, Hanford, and surrounding cities in the San Joaquin Valley. The lower rate, due to the fewer times handled and elimination of wear and tear on sacks, operates to the mutual advantage of the manufacturer as well as the consumer.

High-Class Merchandising Builds Sales for Michigan Distributor

Recognition of Three Simple Fundamentals in Merchandising Again Demonstrate Their Relation to Success. They Are:

Specially Trained Salesmen, Genuine Service, Owner Contact

By F. L. EDMAN

AN excellent example of what modern methods of motor truck merchandising will accomplish is afforded in the selling record of the Montgomery Motor Sales Co., Battle Creek, Mich., distributor for Transport trucks.

This company has one of the finest motor truck salesrooms in the State of Michigan, with every facility for advantageous display. The buyer cannot fail to be impressed with the very evident stability of the distributor, which is a factor every truck prospect rates high nowadays.

In every respect the selling activities of the Montgomery Motor Sales Co. are just as up-to-the-minute as the appearance of their distributing plant indicates. There are no half-way methods with this company. Every representative who approaches a truck prospect is fully qualified to intelligently discuss the transportation problem involved and to deliver a complete and convincing sales talk.

Salesmen Are Thoroughly Trained

To make sure that every salesman representing Montgomery Motor Sales Co. is so qualified, he must, before going into the field, be able to creditably pass a very rigid examination on the product he is to sell, as well as on the broad subject of transportation in general. The salesman is thoroughly drilled on the technical features of the line, the responsibility of the manufacturer and the local organization behind it, while specimen transportation problems are submitted to gauge the salesman's ability in practical analysis.

For instance, it is assumed that a large coal company is in the market for a motor truck and arbitrary decisions are arrived at covering the following points: (1) The number of tons of coal the new equipment must haul per day; (2) Aver-

age length of hauls; (3) Frequency of stops; (4) Terminal room and conditions; (5) Load-handling facilities; (6) Importance of speed; (7) Average load; (8) Uniformity of loads; (9) Condition of roads and grades. With the necessary information before him the salesman is then required to present a sound and logical suggestion as to the type of equip-

ment on the merchandising of transportation. As will be appreciated from the foregoing, the importance of adequate preparation for any emergency is emphasized, and every effort is put forth to place the proper ammunition at the salesman's finger tips.

They firmly believe that one of the surest ways to convince a prospect of the merit of their claims is to back them up with actual proof from owners. This does not mean just the ordinary use of testimonial letters, but facts and figures, proving economy of operation and upkeep, as well as daily net earnings.

This is not merely presented in the form of a signed statement by the owner, but complete figures, showing all cost items taken into consideration and gross earnings, with the former deducted from the latter to ascertain net profits.

Prospects are always invited to talk the matter over with the owner himself.

Real Two-Fisted Service

Needless to say, any concern with a business as firmly established as that of the Montgomery Motor Sales Co. has a thorough appreciation of the intimate relation of Service to Sales. Firmly imbedded in the mind of every member of the organization, from general manager to shop mechanics is the idea that service is the biggest commodity they have to sell; that 100 per cent service means repeat business as well as new business.

Their equipment throughout is up-to-the-minute, and every reasonable provision is made for the comfort, health and convenience of workmen, realizing that in creating ideal conditions they not only attract the best talent available, but keep their men on edge physically and mentally.

The repair shop is 160 ft. long by 45



One End of the Montgomery Motor Sales Company's Salesroom

There is nothing unnecessary in this salesroom to distract the prospect from the subject in which he is most interested

ment best suited to the specific needs.

Montgomery Motor Sales Co. is now starting the compilation of data which will be of immense practical value as sales ammunition as soon as the work is well under way. This consists of actual operation figures classified industrially and according to size trucks in service. It will then be possible to go to a man, no matter what may be his transportation requirements, and show him just what it will cost to operate a certain size truck, based on costs determined from conditions exactly similar. Pursuance of this work has value also in familiarizing members of the Montgomery organization with different lines of business, which will better prepare them to get the prospect's viewpoint and talk to him in his own language.

Every salesman on the Montgomery staff is impressed with the thought that he is a motor truck specialist and that his success depends on intense concen-

ft. wide, with an office, locker rooms and wash rooms for the shop workmen. The floor is of wooden blocks laid on cement foundation, which is generally recognized as the most desirable floor for this purpose. A blower system for heating is provided, the same being used for forced ventilation. With large windows in front and on one side, as well as a skylight, all the advantages of effective natural lighting are provided.

There is ample space to take care of twenty trucks at a time, with sufficient room to work around each. There is an overhead track both in front and rear with chain hoists, so that either end of the truck may be raised at any time.

Besides all the smaller tools commonly used in repair work, a lathe, two drill presses, emery wheel, power press, blacksmith's forge and an acetylene welding outfit are included in the service equipment.

Attention to trucks in service is a mat-

ter to which this company pays special attention. They make free use of personal letters, as well as the telephone to induce customers to bring their trucks in every thirty days for free inspection. Inasmuch as they have not as yet been able to convert all their truck owners to this system however, they make a practice of sending a man out once a month to call on every customer who has not reported for inspection. This individual who may properly be called a contact man, is not only an expert mechanic, but a salesman as well. In going over a truck with the owner present, he takes the trouble to make detailed explanations as to the proper care and adjustment of certain parts, thus eliminating a lot of the service for which the user would ordinarily have to come to the distributor. This is all information the owner likes to have and he appreciates education along this line. It helps to keep him satisfied with his investment.

This mechanic-salesman also finds that

much can be accomplished in the way of getting a line on prospective truck buyers from present owners. Satisfied users are always glad to help out in this way, and they usually have information that enables them to do so.

In brief, this company views service not in the light of a necessary evil, but as an opportunity to tighten their grip on the available truck business of their territory. The service policy of this company is one of the strongest talking points at the command of salesmen and it is used to the limit—it is actually sold along with the product. And when we say "sold," we mean just that. It is not merely spoken of as an intangible something of doubtful value, but the policy of the company is explained in detail, as well as the equipment that makes it possible. Actual instances of the rendering of superior service are cited, with the open invitation to the prospect to ask any Transport owner what he thinks of their service.

Novel Six-Wheel-Drive Truck and Two Trailers

A TWENTY-TON road train has just made its appearance in California which consists of a ten-ton truck with six-wheel drive, and two five-ton trailers. It is especially adapted for hauling ore from mines or for transferring freight for a distance of 100 miles or less at very low cost per ton mile, due to the fact that the entire tonnage is driven by one man and one engine.

There are four wheels and two axles in the rear of the truck over which the load is carried. The truck steers on the two front and two rear wheels.

All of the four steering wheels intersteer so that when the front wheels are turned the two rear wheels automatically turn in the opposite direction, so that the truck is practically on a pivot, giving a very short radius. Each wheel of the motor truck and the trailers have their own individual brake, the brakes being a special hydraulic control type.

All four wheels of the two trailers intersteer, and follow in the exact path of the rear truck wheels, consequently one driver can drive the train around a sharp corner without looking back to see if the trailers are striking anything.

The six wheel drive eliminates entirely the slippage and gives a traction of 100 per cent.

By putting the ten-ton load over the four wheels in the rear instead of over two as in the four-wheel truck, it doubles the bearing surface of the train and only brings half the pressure on any one point of pavement.

There is a device that automatically puts the proper amount of brake on the trailers when they are crowding the power unit going down grade.

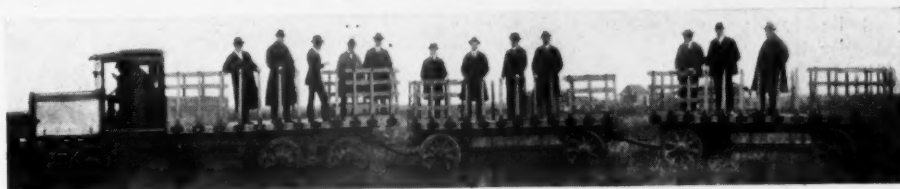
All differentials employed in this truck are self locking and positively driving, which increases traction, reduces skidding and does away with wheels spinning under all conditions. If one wheel is in the mud, there are five remaining wheels on which to drive. The differential has only four parts.

The universal joint consists of a driving fork, double slotted ball and driven fork. The two forks are arranged to accommodate the gear in one case and the driving member of the wheel in the other. The slotted ball acts as transmitter of power between the two fork members.

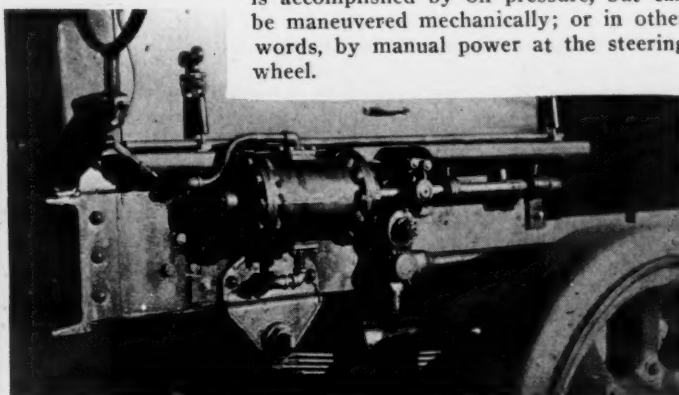
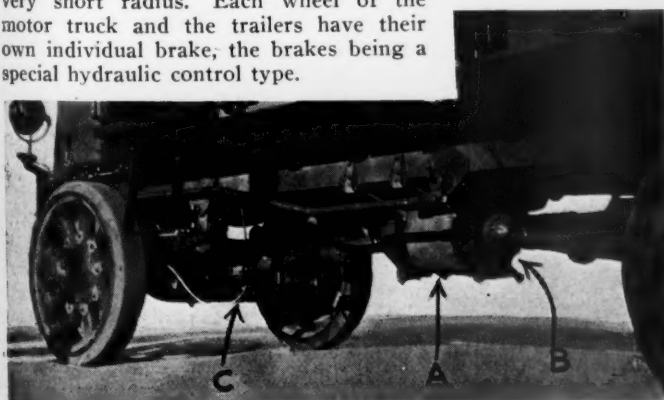
Emergency brakes are at each end of the transmission, and are operated by the customary hand levers.

The service brakes are of the hydraulic type; that is, operated by oil pressure. They are located at all wheels, both steering and non-steering wheels. Steering

is accomplished by oil pressure, but can be maneuvered mechanically; or in other words, by manual power at the steering wheel.



As All Wheels of Each Unit Intersteer, This Train is Claimed to Follow the Exact Path of the Rear Truck Wheels



Close-up Views, Showing Particularly Four Special Features of Construction

The illustration at the left depicts A, transmission; B, special universal joint; and C, one of the service brake hydraulic pressure lines. The right-hand illustration shows the hydraulic apparatus used for steering. It is mounted on the left-side front of the chassis frame

How Jimmy Skipped the Yellow Slip and Made Dollars Out of an Idea

This is a Human Interest Story Interwoven With Actual Facts That Can be Applied to Many Service Stations

By JAMES J. FITZROY

A DEALER in an Eastern state, and in a section where new trucks were not selling, was scanning the statements of the various departments with a view of reducing some of the overhead. It was necessary to make radical cuts, for Old Man Overhead was already several laps ahead. As is usually the case, the service department was given first choice in the retrenchment plan, for this dealer believed he could effect a rather tidy saving by wielding the axe freely.

So the service manager was called to the private office and the news broken gently. The dealer said he was sorry to ask the service head to let men go but he was obliged to. The dealer pointed out that he had carried the men over from fall and gently intimated that he wouldn't have, had not the service head made out a good case. Also the service manager would get a slight cut, but as soon as business picked up the old wage would be reinstated.

Turns on the Blue Spotlight

Now this service man felt pretty blue. He had gathered around him a crew of good, faithful, loyal men. They were hand picked good mechanics. Then, two of the boys were depending upon their wages to swing the new homes they were buying. It would be tough on Jimmy Henkel who had only been married a month. It was the cumulative effect that the service manager was thinking of as he listened to the chief explain the whys and wherefores. The dealer concluded the talk by stating that the men were to be let out the coming Saturday. It was Monday that the instructions were given the service head.

That afternoon there was posted on the shop bulletin board a notice to the effect that every employee interested in his position would do well to attend a meeting to be held at the station that evening, and signed by the service manager. The tip quietly circulated through the shop, all departments, that it behooved every man to be on hand, for something was going to drop, that the boss was swinging the axe.

All were on hand, even the apprentices, that night and the service head got down to brass tacks as was his method. He told his men in a few words that he had been ordered to drop six men from the mechanical department, and cut one from the parts, tire, electric, machine and inspection. A few words were devoted to why. Had anyone anything to suggest?

Throws Her Into Reverse

Yes, one had. Jimmy Henkel. He sensed what was coming by the atmosphere in the office, for bad news leaks out. He had a suggestion, probably an unusual one. He was invited to shoot. "Nothing much," said he, "only let's throw her into reverse. What I mean is, we fellows are stuck in the shop and when plenty of work comes in we are on easy street. When it doesn't we get the gate. Now no matter how well we work—when there isn't any we are let out. We're just order fillers, that's all. Now what's the matter with our selling the work? Here's the idea. We know the Best-Ever truck from steering knuckle to tail light. Know when we pull down a job just how she has been used. We can read the story as simple as A, B, C. We also know when, how and where we could have saved the owner a big bill if we could have told him what to do. Our salesmen can sell trucks, although they ain't showing any speed now, but they can't sell service. All they do is talk about it and I guess we all know what they tell the buyer is some ways off.

"Now if we could work out some plan where we could go out and sell the

owners who are fighting shy of the shop these days we could just keep everyone humping. I don't know how we're going to do it but that's my idea."

Well, that started something. By the time the meeting broke up, and it was well after midnight, a committee of three, and including the service head, was appointed to draw up a plan, and it was agreed that another meeting would be held on Thursday night to arrange details.

Committee Displayed Real Pep

When the committee got through here's what it suggested. Inasmuch as a man was to be laid off from each department and five from the mechanical, volunteers were asked for to be the one and the five. These were to be supplied a list of the customers whose trucks needed work through means of the inspection records, and the men were to go out and sell work. In other words they would be coached in approach, courtesy, etc., and allowed to talk service costs, etc., thus using practical mechanical knowledge to sell the owner. The man from the parts department was also to function as a salesman and to accompany a mechanic. The electric, machine and



Special Equipment for Towing Wrecked Motor Trucks

Showing one of California's repair shops which recently included a special towing dolly in its equipment for towing wrecked motor trucks. With this dolly a wrecked motor truck can be towed without the necessity of having a driver at the wheel of the wrecked truck. The dolly, made entirely of steel, has two points of suspension and three swivels directly over the axles. These swivels are placed so that they can be easily adjusted to meet every contingency, and there is ample width between the two points of suspension to keep the truck in balance at all times. When towing a truck with the rear wheels wrecked, the rear housing lays snugly in the bolster, thus obviating the necessity for clamp, and when towing a car with the front wheels wrecked the 36 in. tread of the dolly will not allow the car to slide far enough either way to throw it off balance.

tire men were to merchandise their lines, also to interest the prospect in equipment when possible.

Mechanics Submit Sporting Proposition

A committee, exclusive of the service manager, was chosen to sell the plan to the chief, and Jimmy Henkel was elected spokesman. The service head arranged for the meeting but refused to be present. In a few words Jimmy Henkel outlined the idea, stating that the men believed business was coming back, that they did not wish to seek jobs elsewhere and liked the concern. Would the chief allow the men who were to be laid off canvass the owners as mechanical salesmen? If he would the men would work without wages but if they were successful with selling, brought enough work in to start the shop at top speed, and it continued, would he be willing to pay them wages for the time they were out?

The novelty of the plan pleased the dealer but he asked how he was to be compensated for the money he would be obliged to pay out in salaries even if the men put the plan over in a week. He called attention to the fact that it would mean quite a tidy sum and that it would be a dead loss, a rather high commission to pay for service station work which was none too profitable.

All to Win, Nothing to Lose

But Jimmy Henkel had the answer. Asked the chief if he didn't pay a good commission when his salesman sold a truck? Wasn't there profits in parts, tires, electrical work and equipment? Well, Jimmy argued that there was profit in service work and the more work the bigger the profits. And besides wasn't it worth something if some of the old customers could be brought back to the shop? "Anyhow," concluded the speaker, "it doesn't cost you a nickel if we don't win out."

The chief took the matter under advisement and later called in the service head, asking the latter if it was his plan which met with a denial. Did the service manager think the mechanics could sell anything? Well, the service head had no evidence that they could but neither had he any that the salesman ever had sold any service. Yes, he thought the plan was worth trying out.

Might develop one or two real salesmen. Anyhow the boys in the shop were full of pep and it was a bet that better work and more of it would be turned out, for they would have an incentive. And as the spokesman of the committee said, it did not cost anything to give the plan a whirl.

What the service head did not tell his chief was that the men had agreed that if any man failed to deliver the goods that he was to be called back to the shop and another given a trial BUT the failure was to get only half the salary of the new man. After a certain length of time the new man could oust the other, who would then be outside entirely.

A prospect list was prepared and the men zoned. Letters of introduction were written by the service manager, and each salesman supplied with copies of the inspection reports, also parts lists with prices. The men were well grounded in the service policies, told who the man to see was and his characteristics. Some of the men had cars.

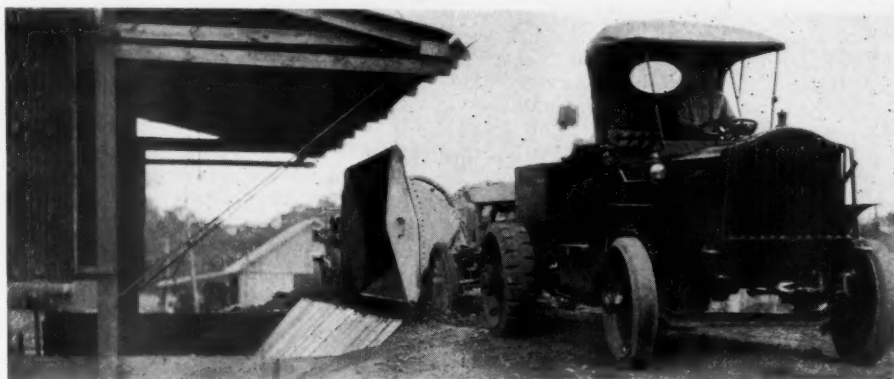
It would be nice if it could be stated that the scheme worked out 100 per cent. and a nice ending made to the story, but, as a matter of fact, only two of the five mechanics survived the test. The other three went hunting a job. The two who stuck, and the going was not easy at that, did after much arduous work and disappointments deliver the bacon, so

much so that two other men were engaged. Now it may have been that the truck owners plus general business picking up plus spring was responsible for normal business in the shop, but the service head swears it is different. He says he knows.

How the Plan Worked Out

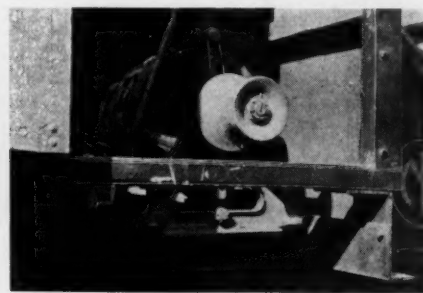
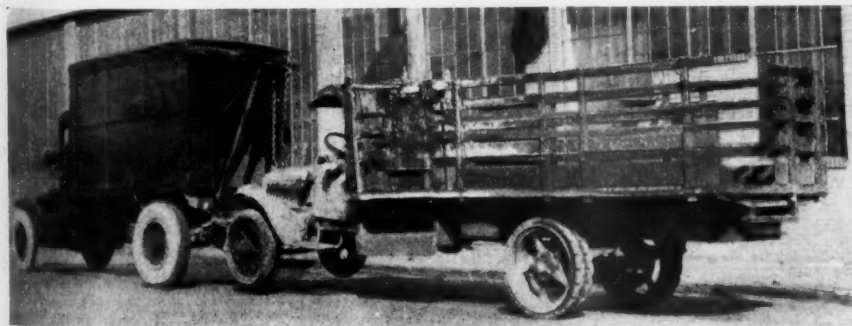
The parts man is back on the job, for with normal business he was needed, as was the electrical and machine man. The tire man just nosed out the yellow ticket at the wire. Jimmy Henkel, the name is fictitious, of course, created a new position. He is now the service salesman and is making good at his new work. He is an outside man and doubles in selling and inspection. The other mechanic-salesman who survived is now foreman. And the dealer? Oh, he was satisfied with his bargain. The sheets from the shop showed Old Man Overhead taking the count, for the boys were producing. Anyhow, the dealer soon forgot the service station, for truck sales began to pick up. The dealer always does when new trucks are moving.

The moral to this story is that when new trucks are not selling as fast as they should it is time to sell parts and service to those who have trucks but cannot see a new one. And why shouldn't service in all of its ramifications be merchandised and as well as the new truck?



A Train of Highway Trailers Being Dumped at Incinerator, Indianapolis, Ind.

The City of Indianapolis, which has been using drop-frame trailers for the collection of city garbage and refuse, recently took over equipment manufactured by the Highway Trailer Co., Edgerton, Wis., with which they claim that the reduced cost of operation has caused a saving of over \$30,000 in the hauling of ashes alone by this process.



This Traveling Service Shop on a Two and a Half Ton Mack Chassis is One of the Service Features Maintained by the Cleveland Branch of the International Motor Truck Corporation

For wrecking jobs, the truck is equipped with a crane and a four-speed winch. The latter shown at the right possesses the added strength, characteristic of chain as contrasted against wire cable equipment. Speed is the prime consideration. For this reason pneumatic tires are used. The enclosed body with its systematic arrangement of tool cupboards, bench and vise, and complete supply of necessary tools and wrecking devices, facilitates the work of the mechanic. The large illustration shows the truck bringing in a "cripple," one of the survivors of a garage fire. As the front end was rendered completely non-operative, the truck had to be hoisted and towed in.

Every Commodity That's a Big Seller Has Been Consistently Advertised

What About Your Service Station?

By C. S. PERRIE

AT a recent factory service managers' meeting, the independent service station was discussed, and referred to incidentally as a "back alley garage." The speaker said, among other things he didn't like about the independent shop was, that they were taking business away from the dealers. The discussion was quite lively and there was one service man who spoke a good word for the good independent shop.

What's Wrong With Service

The writer does not propose to enter into a discussion as to the pros and cons of the shops referred to but does believe, however, that there are some mighty good, efficient independent service stations and that some truck dealers would do well to copy their methods and rates. Now if these shops are successful, and the speaker who deprecated their existence indirectly admitted it, how do they get their business? **THEY ADVERTISE.**

The majority of the independent shops are, as a rule, located in the small city, towns and villages. Pick up the local paper and it will be found that these shops advertise. Not always consistently but at least until they are established. Some advertise during certain seasons. And in this respect they differ from the majority of the truck dealers. As a

matter of fact, how often does the truck dealer feature his service station, policies, etc., in his copy? Some do, it will be granted, but more do not. The advertising appeal is usually concentrated on selling the new truck.

Why not advertise the service if it is good service and the policies are right? Why not? Isn't service a commodity and if you have a good article why not tell it in print? Your salesmen may sell it indirectly although the success is doubtful, and the service heads will when given the chance, but their opportunities are necessarily limited—are they not?

What the Retailer Does

When a retail merchant has a stock of goods and business is generally quiet, what does he do? He advertises—bargain sales, perhaps. It would not be practical for the service station to advertise bargain sales directly, but indirectly it is perfectly feasible. If a truck dealer spends thousands of dollars for up-to-date time and labor saving machinery, tools and equipment, has skilled mechanics, efficient shop systems, ample supply of parts and an overhead within reasonable limits, isn't he offering his customers and other truck owners a bargain, if you compare his costs of service with those shops not similarly equipped?

In some sections of the country we hear that things are quiet in the truck service station. How many of these dealers, or service heads for that matter, have made any efforts to boost business during dull periods? Of course some have sent out letters of the conventional type, but what is the matter with some punchy, snappy, educational copy in the local papers carrying a message that will go across to the owner **who thinks he is saving money by postponing the day when repairs will be needed?**

A Real Salesman Will Sell

The first principle of advertising is to create a desire. Establish an opportunity for a real salesman with a good product and he will do the rest. A good salesman will sell old line articles in a dull market because he will study the prospect and supply him with a business reason why he should buy now. The great trouble with the service today is that the industry, dealer and factory, although believing in service, has not reached that point where it is considered timely and proper to advertise it. If service in the truck industry is **as important as we think it is**, then it is a commodity which should be advertised and merchandised.

Personal solicitation or selling is very effective, we grant, but it is a slow method of getting the message over. When a business house desires to introduce a new article it advertises, service can be classed in the same category. It needs advertising.

Here is Conclusive Evidence of Motor Truck Efficiency

The Parmelee Co., one of the largest authorized railroad baggage and transfer companies in the country, through the purchase of fifty 1½ ton Diamond T trucks, has taken another step forward in the replacement of their horse-drawn equipment with motor trucks. They have been doing this for several years past, but this addition to their fleet constitutes one of the most important steps along this line that they have taken.

After a careful study of the comparative cost of horse-drawn equipment and motor trucks, they have made this change, having in mind also the most efficient service which it is their desire to render the traveling public. These trucks are used by the Parmelee Co. in collecting and delivering trunks and baggage of various kinds. The company now has a total of 80 Diamond T trucks in service.



Interstate and City Moving by Specially Designed Motor Truck Equipment is Rapidly Being Recognized as the Most Economical Method by the Moving Public

W. B. Hiner, Gen. Mgr., Red Ball Transit Co., Indianapolis, Ind., recently staged a 1000 mile tour through all the main cities between Indianapolis and New York City to impress upon the minds of the public the possibilities of motor truck moving. The caravan consisted of nine U. S. trucks with specially designed moving vans. The fact that the entire trip was made, with all trucks under full load, during the dead of winter, with the roads in poor condition, and the thermometer for a portion of the trip below zero, and still only losing five hours for repairs, is a record worthy of note.

The Motor Transport Clearing House

At the annual meeting of the National Highway Traffic Association, held in New York, May 12th, a number of interesting reports were read, of which the report by Tom Snyder, of the National Committee on Highway Transport Clearing Houses, is of exceptional interest to every dealer and truck manufacturer in the country.

It calls attention to the urgent need of establishing motor transport terminals and clearing houses. The tremendous waste resulting from terminal congestion, which is now adding millions to the cost of transportation, would be eliminated. The greatest need which all common carriers are now facing would be provided.

THE big question coming from the shipper, the consignee, the public and the railways today is, can the highway and the motor truck take the short haul L. C. L. freight off the hands of the railways?

Even if the answer is yes, with the provision that time for its proper development must be allowed, it immediately suggests system, uniform methods, and crystallization. We cannot build confidence, nor can we hold confidence already developed by telling the shipper that he can have the motor transport service over the Jackson Highway, but not over the Lincoln Highway, that the carrier rate over the Jackson Highway is two cents per 100 lbs. per mile on first class with a varying rate for lower classifications, while the carrier rate over the Great Lakes Highway is one and one half cents per 100 lbs. per mile, with no classifications, that there is no store door delivery charge on shipments over the Bingo Highway, but that such a service fee is collected on shipments over the Johnson Highway.

We can no longer satisfy the shipper or consignee with the fact that truck operator Jones who, though he is responsible financially for the goods turned over to him, also carries a dependable cargo insurance policy, while operator Smith is not responsible and is also without insurance, but that Smith hauls for a lower rate than Jones.

Greatest Need in Motor Transport

The greatest need in the development of motor transport as a dependable transportation service out of all American industrial centers is the establishment of motor transport terminals and clearing houses. A highway transport clearing house is an established station from which highway transport shipments can be cleared from the shipper to the transportation trucks, operating over any or all highways over which transportation service is being rendered.

It is a centralizing station to which jobbers, manufacturers, merchants and every variety of shipper can bring his consignments, big or little, and from which station, Rural Motor Express Trucks, Intercity Motor Express Trucks, Highway Transport Trucks, load and de-

part according to route schedules, or special service arrangements.

It is also a station to which agricultural products, eggs, poultry, butter, cream, and other commodities can be shipped and cleared to consignees, be they individual citizens, merchant, jobber or manufacturer.

The great service of a motor transport clearing house will be to meet the fluctuating demand for motor transport, to fix rates, determine classifications, maintain schedules, and to educate the shipper, the consignee, and the general public as to the advantages of this type of transportation.

Many Communities Neglected

Motor Transport has not been developed as a broad dependable system of transportation. Splendid service is being rendered between many cities throughout America, and this often where the keenest kind of steel rail competition exists, while many rural communities in great need of motor transport service are not served.

Many routes have been established to serve communities where steel rail service is far below the transportation demands, but much of the service now being rendered, good or bad, is but blind adventure.

Classifications as established by the common carriers are rarely observed by the motor transport systems, the non-observance of such classifications already established being the cause of the failure in many transport adventures. Rates for transportation are as yet the most indefinite element in the entire industry.

Co-operation between operators for the development of economical shippers' pickups and consignees' delivery systems is as yet unknown, schedules are indefinite, and service capacity often inadequate to meet shippers' demands.

These and many other barriers to the practical application and industrial economy of motor transport could be quickly overcome through a motor transport clearing house. This is a centralizing point of activity where ideas and methods can be cleared as well as tonnage, and highway transport is now waiting the stabilizing influence of uniform and dependable methods.

Clearing Houses, and the Clearing House system in all freight clearing centers are of constantly increasing importance, and as time and economy in clearing shipments are being recognized as the major portion of the transportation problem, the motor transport terminal comes rapidly to the foreground as a tremendous factor in the entire scheme of transportation.

The major portion of all shipments are consigned to a place, and not to the consignee, and though the consignee may be a farmer or a rural merchant within a few miles of the freight terminal and though this distance may be but a fraction of the transportation distance, it is very often the most expensive leg of the service both in time and money.

Transportation is not complete until the consignment reaches the consignee, and yet in our present system a very definite interruption takes place where consignment reaches the terminal, at nearest point to destination.

This interruption takes place because the rail or water carrier feels that its responsibility ends at its terminal, and the consignee is expected to complete the transportation service, with the result that terminal congestion is adding millions to the cost of transportation, and additional millions because of demurrages and store house charges.

Store Door Delivery

Store door delivery is now being considered by many of America's largest shippers as a means of providing a continuous transportation service from shipper to consignee, and to provide that the service be extended to all consignees within motor transport distance of rail or water way terminals.

Store door delivery as a relief to terminal congestion and its many kindred evils immediately involves the application of highway transportation as the service could profitably and practically be extended to consignees forty or fifty miles away from terminal and to farther points if no rail service was available.

With the adoption of store door delivery service, motor transport clearing houses would become an absolute necessity, and with the establishment of motor

transport clearing houses, the connecting link between all methods of transportation would be quickly welded.

A new element of clearing freight through all terminals enters at this point, the greatest step towards improvement in transportation would be taken, and the greatest need that all common carriers are now facing would be provided. A motor transport clearing system would become the connecting link and the immediate outlet to and from all common carrier terminals.

With the extension of this service to points over a fifty mile zone the benefits would be increased in proportion to the tonnage transported.

Transportation has long awaited the coming of the motor truck and the motor truck will enter fully into its place as a great transportation agent when crystallizing influence of motor transport clearing houses will apply it as only such an institution can make the application.

Only through the development of Highway Transport can transportation keep pace with the rapid development in production.

Highway Transportation will always be a comparatively short haul service, and its applicability and economy will lie in its speed and flexibility.

A Motor Transport Clearing House will provide an uninterrupted rapid transportation service from the farm yard to the industrial citizen's door, or from the wholesalers or warehouse platform to the rural merchant's store door. As railways are relieved of this short haul service much of the ever prevalent terminal congestion and its accompanying embargoes and demurrages will disappear, and a greatly improved service in long hauls will result.

The Clearing House as a Foundation for Uniform Methods

No doubt the greatest need of Motor Transport today in establishing itself as a definite mode of transportation is some system of uniform methods.

Many Motor Transport adventures are being made around every industrial center in America. Some of these adventures are being made by individuals who operate one, two or three trucks, other adventures embrace the operation of fleet of ten, twenty or thirty trucks. Some operators depend upon the one-way haul, such as the live-stock haulers, others regulate their service subject to a two-way load. Some operators who see the need of protection to consignments and service to shipper, provide themselves with specially built enclosed bodies, available trailers to care for unexpected service calls, dependable drivers, who keep accurate records and make careful deliveries, while others pay little attention to these details, but get business because of lower transportation charge.

Transportation rates are not uniform, some operators hauling at the common carrier first class rate, adding a pick-up and store door delivery charge, while others adopt an arbitrary rate above or below the common carrier rate as they see fit, and make no pick-up charge, and often no store door delivery charge. Some op-

erators adopt time schedules, and make it their business to keep them, having extra available trucks in case of a break down, while others operate very much at random.

The pick-up at shipper's platform methods, makes motor transport a random service, and subjects the truck operator to many delays due to shipment not being ready when he reaches shipper's platform, as truck operator has no control over shipping departments, and as limited platform space may cost him many delays he has no chance of fixing schedules for reaching shipper.

The pick-up at platform method prevents operators from loading consignments to truck and provides for an unloading order, his last consignment picked up might be consigned to the last stop on his route or the reverse.

A Motor Transport Clearing House would make possible the elimination of all of these evils; in fact, its very service would be the adoption of a system, of uniform methods, first for the information of the shipper and consignee, and second, as a service to efficient transportation.

Type of Motor Transport Clearing Houses

Large industrial centers with well populated surrounding territory will require an out-bound and an in-bound building or section.

These terminals could be established and sustained as a private enterprise and be made profitable through a terminal hundred weight or package fee, to be added to the transportation charge, and through the operation of a cartage system which would be in great demand on pick-ups and deliveries to consignees and from shippers who do not operate their own cartage vehicles, and from thousands of individual citizens who through highway transport and motor terminal service will become the consignees of agricultural producers.

These terminals should be established and sustained through the co-operation of wholesale shippers' associations, farm fed-

erations, and motor transport organizations.

The buildings should be long and narrow, providing the greatest possible amount of platform space on each side of building, insuring relief from either building platform or vehicle congestion. The building should be divided into route sections, local cartage vehicles delivering to platform on one side of building within route sections according to consignments, these consignments handled through narrow building to out-bound platform for shipment that day, or left within building if scheduled for following day shipment.

In-bound Building of Same Character

The in-bound building or section should be of the same character, permitting in-bound transport truck to unload cargoes on one side of building, and local cartage vehicles to clear from opposite side.

Because of the flexibility of motor transport, terminals will be very well cleared daily. For out-bound terminal, shipments consigned to routes over which less than daily service is rendered, should not be received earlier than one day prior to schedule departure of truck. Schedules should be established over all routes offering tonnage in exchange for service, the terminal clearing house keeping all shippers informed as to schedules, transport rates and service offered.

The first service of a motor transport clearing house would be to provide a freight station through which highway transport shipments could be cleared from shipper's vehicle to transport truck, and from transport truck to cartage vehicle, but its greatest service would be to act as an intelligence bureau. Any common carrier can give the shipper all details as to rates, classifications, distance and service schedules over its own lines, but has no interest in the same conditions over other lines.

In highway transport every highway leading out of every industrial center in America becomes a transportation line to the shipper, and each of these transportation lines may have a varying number of



Advertising Features Motor Trucks of Sperry Flour Company

Advertising in its broadest sense consists of the impression which any business house makes upon the public it desires to serve, and is not confined exclusively to the printed and written statements which that house may issue. Many business houses have discovered that the inauguration of motor truck delivery has proved to be the best possible kind of an advertisement. The growing recognition of the advertising value of a motor truck is steadily becoming apparent to the Sperry Flour Company, San Francisco, Cal. A large number of motor trucks are now being operated by the company, which are not only doing the hauling for which they were designed, but are conveying constantly a valuable advertising message for the company.

transportation operators rendering service over it. A highway transport clearing house at which all operators should register their service schedules could issue complete bulletins to shippers, and thus supply shippers with the very information which they need, but without such a clearing house they have no way of securing it.

Many private truck owners can be found within or around industrial centers with whom contracts can be made to operate over highway routes on schedules, if the terminal clearing house will centralize the industrial demand for service.

In smaller towns and cities in which highway tonnage is not great enough to sustain a motor transport terminal, storage warehouse and regular transfer, or trucking firms are rapidly taking on this service and because many of them operate a cartage business in connection with warehousing, or are regularly engaged in cartage service, find that it fits in splendidly and adds to their regular business.

The Clearing House as a Gateway to and From Highways

It may seem unreasonable to say that the public cannot avail itself of the advantages of highway transportation, but this is true nevertheless.

A great majority of regular shippers are deprived of this transportation resource, because only those whose consignments over given routes are sufficiently large to warrant special arrangements for such service, can secure it.

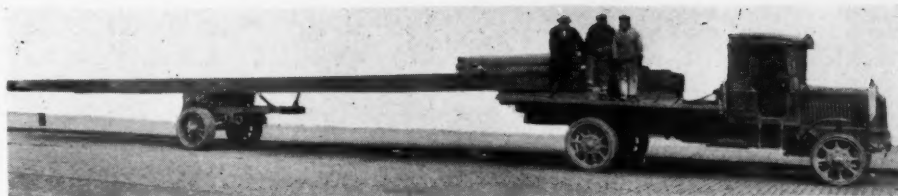
The agriculturist cannot consign a bag of potatoes to the industrial or city consumer, because of the absence of a clearing house through which the potatoes could be cleared to a city cartage vehicle, nor can he consign a crate of eggs or any other products to the city retailer or broker for the same reason.

The theory that all shipments to be transported by motor truck can be picked up at the shipper's platform by the transport truck, and that the highway transport truck can also deliver to store door, or be successfully applied as a cartage vehicle, must be given up.

This statement may excite considerable opposition, because so much has been said and written about the motor truck rendering a service direct from shipper to consignee and that because of such service unnecessary handling of freight has been saved, which is all true, but which will be the special or rare case when motor transport is broadly applied as a definite link in the whole service of transportation.

I know of no important industrial center in America from which (within the next six years) less than eight different motor transport routes will be operated, and from some centers this number may be increased to from twenty to thirty. It would be a daily occurrence for some shippers to have consignments for each of these routes, and limited platform space which has long been a menace to American industry, would prevent the transport truck, from each of these routes, picking up their route consignments.

Many shippers have said that they would gladly use motor transport for all short haul consignments if their shipping departments could load motor transport



How Would You Like to Tackle a Job Like This in Pre-Truck Days?

Heavy girders such as illustrated, weighing 16 tons and measuring 60 ft. were recently transported through city streets by the John Douglas Contracting Company, of Pittsburgh. The equipment included a 5-6 ton Gramm Pioneer truck and heavy duty semi-trailer.

consignments to their own freight delivering vehicles, to be dropped off at a motor transport terminal while making daily deliveries to all other terminals.

A public motor transport terminal and clearing house becomes a gateway to and from all highways; it will supply that definite point of contact which highway transport now lacks; it will develop that responsibility and dependability which the shipper wants; it will become a crystallizing point from which an analysis of possibility and application of motor transport can be made; it will make every citizen in every industrial center of America the consignee of every producing farmer within fifty miles of that industrial center.

Every rural merchant in this same territory will be brought within six hours of his base of supply.

Motor transport routes have been operated out of Indianapolis for the past eight years and up to the summer of 1921, nine operators out of ten went down in failure and defeat. Indianapolis has seven steam and twelve electric traction lines radiating from it in all directions, and the successful application of motor transport with such competition requires system.

In 1920 a clearing house system was organized and began the work of standardizing motor transport, fixing routes, establishing schedules, fixing rates, adopting a uniform bill of lading and freight receipt, with the result that commencing April 15, 1922, ten definite inter-city motor express routes, all operating out of one terminal freight house, and under the direction of one clearing house, each route being handled by one or two different operators, were put into service.

The shipments for all of these routes are solicited by a personal and telephone canvass through the clearing house, and it is the rare thing to find any of these trucks leaving the city with less than a capacity load. Some of these routes are sustaining four trucks, five of them having an operator at each end, which plan will be adopted on each route.

Providing for an operator at the terminal end of each route solves the terminal and distribution problem at these route terminals and adds materially to the resources for meeting emergencies. The route terminal operated by responsible cartage or commercial warehousemen located at the terminal has solved the problem of the return load.

The Indianapolis central freight station has been established in a section of a commercial warehouse, the operator paying out of his pocket the regular warehouse in and out fee of 4 cents per hundred, to cover freight terminal cost. This

fee of 80 cents per ton relieves the truck operator from the service of picking up his load from shipper's platform, enables him to load his truck providing for economical unloading, complete freight bills for each shipment with rates, weights, classification and fees to be collected indicated.

When shippers are instructed that regular schedules are maintained, shipments are sent to the terminal with the idea of securing this better service to consignee, and truck operators are enabled to keep their regular schedules.

The clearing office and freight soliciting department is sustained by fee of \$1 per ton, which is paid by the operator out of his service income.

Insurance covering every passable loss to shipper or consignee, excepting pilferage is paid by the operator at the rate of 12 cents per \$100 value.

The following rates are collected to which is added a store door delivery fee of 25 cents for each stop and 5 cents per hundred weight:

	1st Class	2d Class	3d Class
1 to 5 Miles	.32	.27½	.21½
6 to 10 "	.34½	.29½	.23
11 to 15 "	.35½	.30	.24
16 to 20 "	.38½	.33	.26
21 to 25 "	.40½	.34½	.27½
26 to 30 "	.42	.35½	.28
31 to 35 "	.45	.38	.30
36 to 40 "	.46	.39	.31
41 to 45 "	.48½	.41½	.32
46 to 50 "	.51	.43½	.34½
51 to 55 "	.52	.44	.35
56 to 60 "	.52½	.45	.35
61 to 65 "	.53	.45½	.35½
66 to 70 "	.54½	.46	.36½
71 to 75 "	.55½	.47	.37

The plan has worked out so well that the Central Public Warehouse Co., which is now building a new commercial warehouse of 250,000 sq. ft. capacity, has included in its building plans, the floor and platform facilities for all inter-city motor express trucks now operating out of Indianapolis.

As a large volume of the tonnage now being transported by motor truck from industrial centers to rural communities is now being loaded at commercial warehouses, and as rapidly developing new sales and distribution methods will increase this volume, your committee on motor transport clearing houses suggest as an important early step in its activities, that this committee recommend to the American Warehousemen's Association, the provision for motor transport facilities in all new commercial warehouses.

Latest Methods and Devices for Removing the Static Hazard of Gasoline Distribution

MR. PENFIELD, general foreman of the Associated Oil Company's garage and auto repair shops in San Francisco recently perfected a system for carrying off static electricity that may be present in the metal parts of tanks and chassis of oil tank wagons, and from the metal parts of service stations.

Oil companies have experienced many fires due to the presence of static electricity either in the truck or the service station, and it was to eliminate this fire hazard that the inventor perfected the system.

Let us consider first the service station, as that presents about as complex a problem as any in this direction, owing

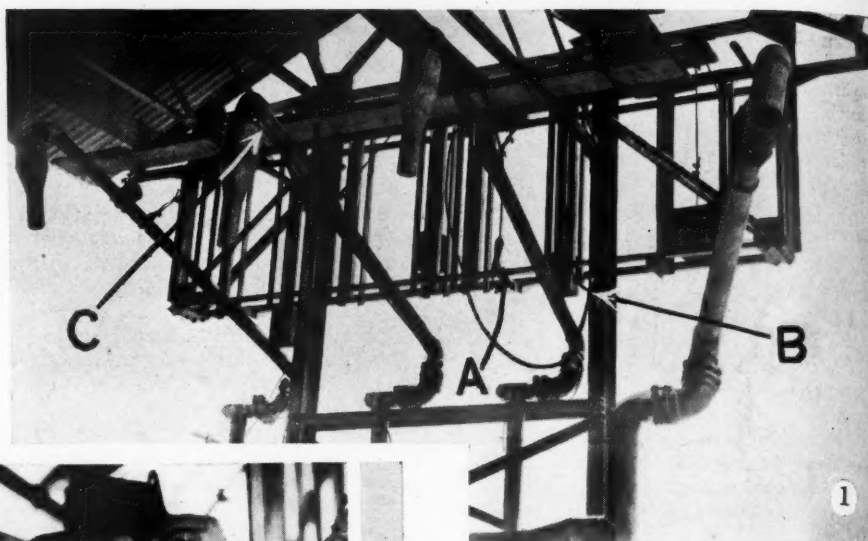


Fig. 1. Apparatus at Oil-Filling Station
Note the plug, A, which together with the wire C, forms the ground. Wire C is attached to the end of the filling pipe

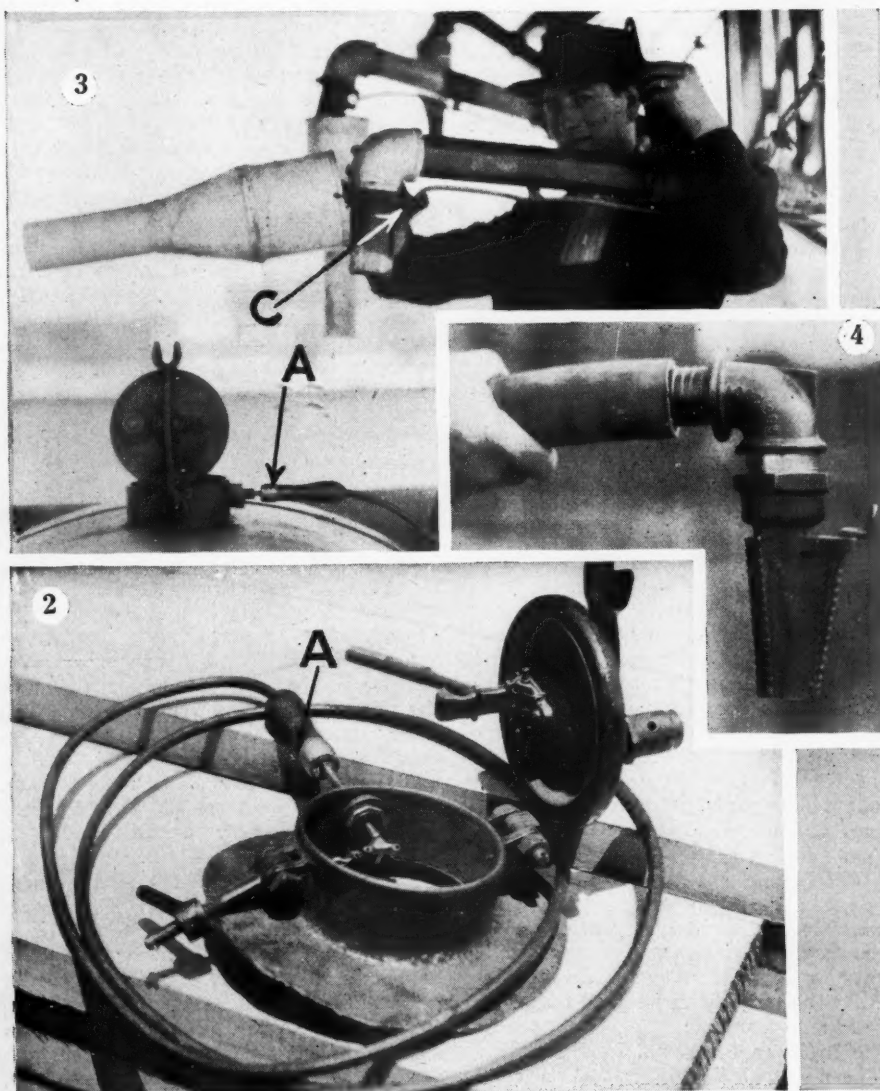


Fig. 2. Showing the Plug A, Which Must be Inserted in Order to Unlock Filler Cap.
Fig. 3. Locking Device, Plug A, Inserted and Ground Wire, C. Fig. 4.
Close-up of the Filling Hole, Locking Connection

to the numerous sources of static electricity. First, static is generated when oil runs through pipes. Second, static electricity is deposited by the wind. Each automobile comes into the service station charged with static in some degree, depending on the weather.

Should an endeavor be made to insulate it, it would only create a great hazard due to heavy discharges. In view of this the "building up" or the "get together" plan is dangerous. The simplest plan is where charges are led back to the earth.

This easy path is what is known as "grounding," and appears simple, but as a matter of fact the several conduits, and the motor frame each present a little problem of their own.

The metallic continuity of piping is also a problem. Any gap in the metallic continuity of piping carrying volatile oils, instead of decreasing, increases the intensity of static. The intensity then builds up until, with a mighty effort, it jumps across.

Any gap in the metallic continuity of piping carrying volatile oils, instead of allowing the positive and negative partners to get together as fast as they are separated, forces them to take to themselves other like partners until they are capable of reuniting.

The accompanying illustrations show the latest method of overcoming the hazard of an explosion which might be caused by sparks from the static electricity. At the oil filling station, each filling pipe is provided with a plug, A (see Fig. 1), which is connected to a wire, B, which, in turn, is grounded. Another

wire, C (Fig. 2), is attached to the end of the filling pipe, and is also grounded. Before the driver can open the filler cap on the truck it is necessary for him to insert plug A (see Fig. 2) into a hole in the neck of the filler cap. By so doing this carries off any static electricity. The act of inserting the plug into the hole of the neck of the filler cap unlocks the cap. Fig. 3 shows the device that locks the cap and also shows how the filler cap is

unlocked by inserting the plug. The latch on the inside of the filler cap is for the purpose of keeping the operator from filling the tank without first inserting the grounding connection plug, as the average driver has a tendency to neglect inserting the plug before starting to fill the tank. It is when the filler cap is open and the oil is being run into the tank that the danger of a spark is liable to start a fire.

To complete the circuit a 5/16-inch

chain is bolted to the frame of the automobile and allowed to drag on the ground at all times.

There is also danger of causing a fire when a hose is used in filling gasoline or distillate from a tank wagon to a steel drum, and to eliminate this danger Mr. Penfield has perfected the device shown in Fig. 4, which can be locked in the filling hole, thus eliminating any danger of striking a spark.

What is the Cause of Most Bearing Failures?

THE cause of the vast majority of bearing failures is due to lack of lubrication. No less an authority than Alfred K. Hebner, president and general manager of the Bearings Service Company, Detroit, thus sums up his experience in the bearings replacement business.

"Particularly in the case of the truck is the need of lubrication necessary, because of the heavy loads carried and the constant day in and day out service to which most trucks are put," states Mr. Hebner.

"All manufacturers of trucks, and in fact of all motor vehicles, recognize the importance of lubrication at certain regular intervals and with proper lubricating materials. They go to considerable expense in the interest of the truck owner and in their own interest, too to prepare diagrams showing where oil and grease ought to be applied.

"If owners would only heed these diagrams they would save themselves a great deal of money in unnecessary repairs. Oil and grease cost less than metal. It stands to reason that where two metal parts come together, some lubricant must be introduced constantly if the truck is to survive.

"Truck dealers should impress upon purchasers of their trucks the importance of regular, systematic lubrication, the maximum time that should elapse between the required lubrication of the various moving parts of the vehicle's mechanism and the right kind of lubricant to use.

Systematic Lubrication Necessary

"Too often truck drivers give their trucks but cursory examinations and just as cursory lubrication. When there is a fleet of trucks, it is desirable that the foreman see to it that the trucks are lubricated systematically and well. Frequently truck dealers have introduced successfully a system of lubricating the trucks of their clients at regular intervals. Certainly the cost—provided the truck would not otherwise be thoroughly lubricated—is inexpensive when you take into consideration that wear, breakage and depreciation is hastened to a very large extent by lack of lubrication.

"It has been recognition of these things and a seeming inability otherwise to guarantee satisfaction that has recently caused practically unanimous adoption by the automotive industry of chassis lubrication.

"Overloading of trucks is another evil which takes its toll in prematurely broken and damaged parts. The resultant excessive stresses set up particularly on rough roads under these conditions shorten the life of the bearing. Dealers cannot preach too long or ardently against the evil of overloading.

Bearings Should be Handled Carefully

"Particular care should be taken in removing bearings, for it is really a delicate job. Steel or hard metal tools should never be used for this purpose, because the bearing raceway may be permanently sprung or deformed by this treatment. Here again, it seems to me, that the truck dealers should take special care that this kind of information is received by the purchasers of their trucks, for every dollar's worth of service the owner gets from his truck, due to proper care, is of just that benefit to the seller of the truck in good will and in word-of-mouth advertising that is spread broadcast concerning his product.

Lubricants Should be Free From Alkali

"Pure mineral oils or greases should be invariably employed. Any lubricant that shows traces of alkali or that may become rancid from oxidization will cause etching or roughening of the highly finished surfaces of the bearing. Lubricants best adapted range from light machinery oils used for small high speed bearings to the viscous greases utilized for those subjected to very heavy loads and those revolving at comparatively low speeds.

"In replacing bearings it should be borne in mind that even though bearings are made of hard metal, this fact does not excuse abuse in installing them. To pound against bearings with a steel hammer is apt to result in harm. If it is found necessary to drive bearings into place, a lead tube or other soft metal should be introduced between the bearing and the hammer, or some means

taken to absorb part of the shock of the blow. Lubrication in every new installation of bearings is one of the most important things to attend to.

"For cleansing greasy parts, experience has shown us that a solution of common washing soda is less expensive than gasoline and usually more effective. A handful of soda in a pailful of boiling water will give the right strength and it should be used hot. The soda can readily be removed after the grease has been gotten rid of by dipping the bearing in kerosene."

Mr. Hebner calls attention to one important point that is often overlooked. He advocates the use of occasional oil additions to the grease used to lubricate axle bearings. The oil keeps the grease in a more or less fluid form, he explains, particularly in cold weather, and also insures the lubricant reaching all parts of the bearing.

Goodrich in New Field

Although organic accelerators have been manufactured by the B. F. Goodrich Rubber Co., for its own use for the past 10 years, the company has just entered the chemical sales field with a complete line of these products. Experience has developed accelerators for almost every known kind of rubber goods.

A further feature that proves of interest, particularly to the smaller factories who do not have a research department or a chemical staff, is the service Goodrich offers through its chemical manufacturing division. They are providing certain technical advice in establishing accelerators in their factory recipes.

Road Building is Big Industry

According to statistics given out by the American Road Builders' Association, there are 114,325 persons engaged in road building work. There are 80,000 federal, state, town, and county highway officials; 7000 road contractors, 2000 bridge contractors, 15,000 civil and highway engineers, 10,000 automotive and chemical engineers, and 325 geologists.

Cultivate This New Truck Sales Field

THE "store at your door" method of merchandising groceries or other necessities of home life, especially through the lesser populated sections of our rural and suburban communities, is not only becoming more and more in favor, but is the solution of the "cash and carry" problem. The fact that this type of merchandising is being sponsored by many well organized and financed organizations throughout various sections of our country is an indication that the traveling store has come to stay. Of course, there are a great many details that must still be studied and solved, but the fact remains that another large field has been opened for the distribution of more trucks. Although it is poor policy to prognosticate future possibilities, we feel assured that the next few years will mark this method as firmly established throughout the United States.

The J. L. Clark Mfg. Co., Oshkosh, Wis., manufacturer of motor truck bodies, cabs, seats and forgings, recently constructed several of these bodies designed in accordance with the requirements such service has taught as essential. This concern is one of many which are anticipating profits to be derived from this angle of truck and truck equipment distribution. Today several of these stores are operating in different sections. Records of operating costs and net profits prove them very successful from a merchandising standpoint. One organization prepared a system whereby these trucks follow a certain route and schedule each day, stopping from two to three times in a given distance, enabling the purchaser an opportunity of buying daily needs, at chain store prices, practically at their door.

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rying groceries, canned goods, vegetables, meats, pastries, butter and cream. In fact, everything included in grocery merchandise is to be found on this grocery van.

One man operates this store without assistance, as all goods are wrapped in packages of popular selling sizes. The purchaser selects all goods desired, which is later checked up by driver who receives cash payment as customer leaves.

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Institute for Progressive Farming is Organized

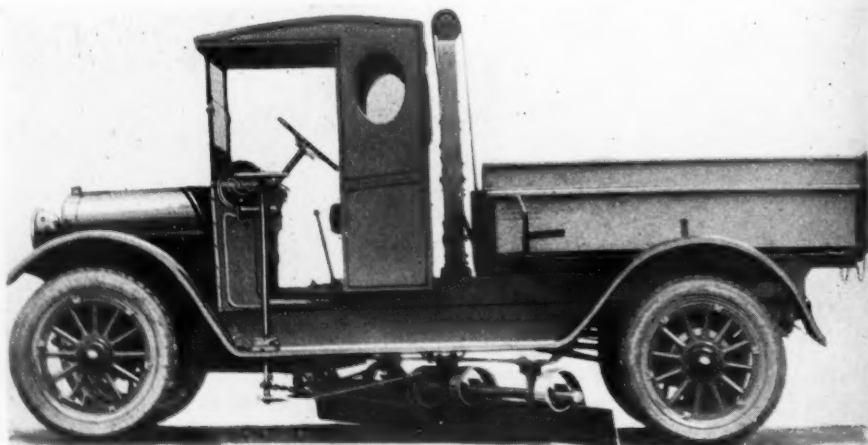
Tractor manufacturers and others interested in better farming have formed an organization to be known as the National Institute of Progressive Farming

and will have headquarters in Chicago.

The general purposes of the organization are to collect and distribute through bulletins, lectures and the public press, information upon the development and improvement of methods in farming, reducing the cost of production of farm produce; the use of mechanical power on the farm; the development and improvement of farm animals, particularly those raised for dairying and food purposes; to establish relations with Departments of Agriculture, both national and state, with the agricultural colleges, farmers' and breeders' association and all others interested in better methods of farming, agriculture and stock raising; also to maintain and establish an institution for fully developing and carrying out these specified objects.

This institution will be of great value to the truck dealer and manufacturer because it will forceably present the advantages of the application of power to progressive farming, the motor truck now being a necessary part of the power farming system.

Guy H. Hall, Kansas City, Mo., appointed director in charge of this work.



Reo Speed Wagon With a Root Floater and Yule Dump Body and Hoist

Maintaining the roads after they are built is one of the biggest problems confronting communities at the present time. An outfit equipped with the above is the solution, for it is much less expensive to keep the roads in proper condition than it is to rebuild them. This complete equipment is sold by the Way Products Co., Lansing, Mich.



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New Haven Hopes to Regulate Trade-in Allowances

The New Haven (Conn.) Automotive Dealers' Association have inaugurated a plan to regulate the allowances made for passenger cars, made by their members when accepting trade-ins. The plan particularly refers to passenger car trade-ins.

A copy of the agreement, which averages about four large typewritten pages, is signed by the members of the New Haven Association. It provides that an official appraiser shall determine the market value of the vehicle, for which a charge of \$2 per is made. The certificate is valid for two weeks, and "shall be renewable without further charge for a period of two weeks." It is noticeable, however, that the plan does not provide for trucks except "recommending that all commercial cars taken as part payment on new commercial cars be appraised. This is not compulsory."



EDITORIALS



Comfort a Prime Requisite

ONE of the most important things to be considered in connection with the operation of motor bus lines is the comfort of the passengers. Nothing will depreciate the bus in the eyes of the public more than uncomfortable and overcrowded vehicles. This is a problem which demands serious consideration by both the purchaser of the vehicle and the manufacturer. The tendency of many bus owners is to crowd their vehicles ostensibly for the purpose of increasing the revenue. The manufacturer of the vehicle will suffer because of the excessive service and maintenance charges which accrue because of broken units. Overcrowding is simply overloading in another sense. Nothing has perhaps engendered more ill-will against the street railways than the practice of "packing them in."

Crowding the motor bus will tend to discourage that class of patronage which is willing to pay for a better class of service because of the comfort afforded. The bus operator should adopt the rule of "a seat for every passenger" and thereby encourage citizens to ride in motor buses. Furthermore, the operator should not try to render this service at a price which will be reflected in the class of service given. Jitney prices will only lead to failure.

Wanted: A Lot of Boosters

WONDERFUL progress has been made in this country's road building program ever since the Federal Aid System has been in existence. The question which is of most concern just now is whether this country shall wait twenty years for a complete inter-county system which will gridiron our country or whether we shall build these roads within the next ten years.

Naturally it is the desire of everyone connected with the automotive industry to see these roads built as quickly as possible. But these roads cannot be built unless there is money appropriated to build them. So far, Congress appropriated \$340,000,000 for Federal aid. Approximately two-thirds of this has been spent. Of the \$126,000,000 remaining, forty to sixty million will go under contract before the first of this July, so that what is left will not be sufficient to carry on the good work another year unless appropriations are made.

The fact of the matter is that if Congress will appropriate \$100,000,000 a year the road system plan-

ned can be finished in ten years. If only half that amount is forthcoming it will take twice as long. Can this country afford to wait twenty years? We think not. This is a subject which every one in the trade should give consideration. Urge your congressman to support the road building program to the fullest extent.

Besides taking an interest in the state road program the dealer should take an even greater interest in the road developments in his own territory. The better the roads the more satisfactory motor truck transportation can be carried on. This country needs a network of roads connecting every county seat. He should use his influence through his local trade organization to show the county authorities the necessity of keeping the roads properly maintained. Under the Federal Highway Act the roads must be maintained. The county roads, however, do not come under this ruling. It is here that the dealers in a body can use their influence.

Making Trade Meetings Interesting

MANY local trade organizations seem to experience difficulties in making their meetings interesting enough to draw out the members. Many dealers join an organization and then stay away from the meetings. Much of this lack of interest seems to generate from the fact that the speakers invited to such meetings are not qualified to speak upon subjects of direct interest to the members. Although the average dealer meetings promote good fellowship and harmony among the ranks of the trade, there are many dealers absent from these meetings who cannot see any advantage in such meetings because they do not discuss the problems which directly affect their business. Speeches by local politicians are not half as interesting as sales talks by some of the local trade. Speakers should be selected right from the ranks of the membership.

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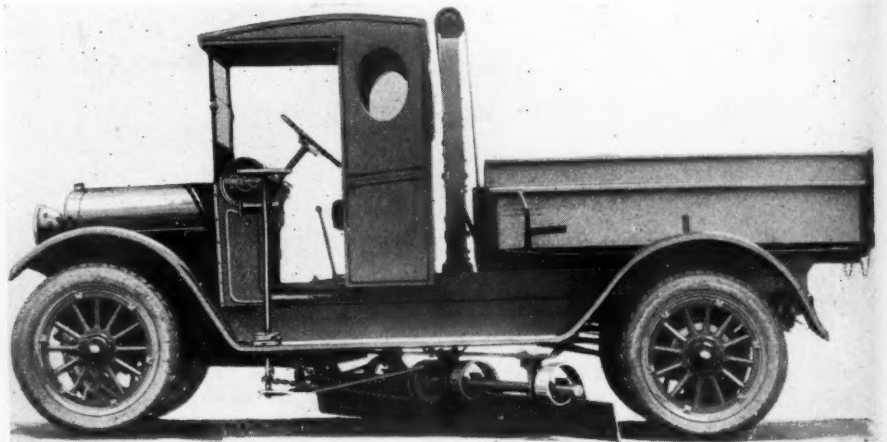
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News of the Trade in Brief

Truck Sales Increase Includes Every Section of the Country

DEMAND and supply are receiving great attention in the motor truck industry at this time. This close contact with the market on part of the manufacturer and the dealer has created a nice balance which will prevent overproduction. As a matter of fact the tendency is even toward underproduction, an inability to obtain trucks to fill their orders being reported by some dealers.

Truck production has taken a decided spurt in the last few weeks. Factories are employing more help to conform with the increased production schedules. The increase, however, is being made by the executives with both eyes open, bearing in mind the errors of the past two years.

The Packard Motor Car Co., of Detroit, is now employing 5500 factory workers, an increase of 1500 since the first of the year. Current sales of trucks have shown a marked improvement. The number of dealers has increased during the past year over 100 per cent with a consequent increase in the company's facilities for sales and service.

The White Motor Co., reports March orders approximately 20 per cent higher than any month since May, 1920. Forty branches of the company indicate a decided improvement in general business conditions with every prospect for increasing business.

"In the past 60 days," says C. B. Voorhis, vice president and director of sales of the Nash Motors Co., "dealers in practically all sections of the country are ordering trucks in greater numbers than at any time during the past 18 months. This activity is not confined to any one or two sections, but is pretty general throughout the country."

Edsel B. Ford announced that the Ford Motor Co., is putting 100 additional men to work every day and will continue that policy as long and as fast as the workers can be assimilated. He also states that the company expects to reach a production by the end of 1922 of 1,150,000 cars and trucks as compared with 1,038,000 last year.

A large demand for the Kissel Special Highway Contractor's Truck is noted by the Kissel Motor Car Co., of Hartford, Wis. The plant for passenger cars and trucks is now working at 75 per cent capacity.

Capacity production of 800 trucks a month is soon to be reached at the plant of Mack Trucks, Inc., New York. The firm is now operating at 60 per cent of capacity.

The Federal Motor Truck Co., Detroit, Mich., notes that nearly all purchasers of truck transportation are asking for immediate delivery. The company is said to be behind in its orders.

The Republic Motor Truck Co., Alma, Mich., sees a gain of 50 per cent in sales of its products for April over that of March. An order for 26 motor buses has been received from the United Railway and Electric Co., of Baltimore.

The April production of the Yellow Cab Manufacturing Co., Chicago, is more than three times the production of April

of last year. The shipments for March were 350 cars.

Tires and tubes are feeling the same stimulation for increased buying. Akron is a very busy place with the "Help Wanted" sign on the majority of factories. The Goodyear Tire & Rubber Co., expects to reach a production of 25,000 tires daily shortly. The Firestone output is varying from 23,000 to 24,000 daily. Goodrich production is fluctuating between 16,000 and 18,000 a day. Miller is running 6,500 a day. The General Tire & Rubber Co., reports sales 43 per cent greater than ever before in the company's history. The total production in Akron is estimated to be about 75,000 a day, which is close to 80 per cent of peak. Increasing activity is becoming apparent among the numerous Akron machine shops, core and mould makers and rubber machinery makers.

Among the parts makers, the Atwater Kent Manufacturing Co., of Philadelphia, state that "demands of automobile manufacturers for electrical equipment from the Atwater Kent Mfg. Co., has resulted in the plant increasing its output from 30 to 90 per cent of capacity in the last 60 days." The Timken-Detroit Axle Co., is said to be behind in deliveries. Improvements in several plant units will make possible increased capacity. The American Bosch Magneto Co., at Springfield, Mass., has now a force of 1200 which will soon be brought up to 2000. Work on a new building to take care of a heavy increase of orders has begun at the plants of the Westinghouse Electric & Manufacturing Co. The Stewart-Warner Speedometer Corp., of Chicago, is now producing double the number of units produced this time a year ago.

Transport Session to be an Important Event

As we go to press the Highway Transport Section of the Chamber of Commerce of the United States is in session at the Masonic Temple, Washington, D. C. T. H. MacDonald, chief of the Bureau of Public Roads, will speak first on "Economic Foundation of Future Highway Progress." He will be followed by E. J. Mehren, editor of the Engineering News Record, who will discuss "Practical Highway Transport Regulation." A. J. Brosseau will be chairman and J. Rowland Bibbins, secretary.

There will be a general discussion following the addresses, as well, probably, as the passage of resolutions. The meeting is an open one and it is hoped, will be well attended by state highway officials and others charged with carrying on the program of state highway development.

Coming Events

SHOWS

- May 22 to 27, 1922—St. Louis, Mo., Automobile Accessory show under the auspices of Motor Accessory Trade Association of St. Louis, First Regiment Armory. J. M. Gennison, Show Mgr.
September 4 to 9, 1922—Hartford, Conn., Annual automobile show at the Connecticut Fair Grounds.
October 7 to 14, 1922—New York City. Electrical exhibit at Grand Central Palace. Electric Automobiles. Norman Maul, 130 East 15th St., New York City.

CONVENTIONS

- Atlantic City, N. J., June 26 to July 1, 1922—25th Annual Meeting of American Society of Testing Materials at Chalfonte-Haddon Hall Hotel. J. K. Rittenhouse, Asst. Treas., 1315 Spruce St., Philadelphia, Pa.
Chicago, Ill., October 18 to 20, 1922—Convention of National Association Farm Equipment Manufacturers.
Colorado Springs, Colo., June 19 to 24, 1922—Summer convention of the Automotive Equipment Association, Broadmoor Hotel, Wm. M. Webster, Comm., 1813 City Hall Sq. Bldg., Chicago.
Detroit, Mich., May 16 to 17, 1922—Fifth semi-annual convention of the factory service managers of the National Automobile Chamber of Commerce, Hotel Statler, Harry Cobligh, Sec. of Service, N. A. C. C. No. 366 Norman Rockwell Bldg., New York City.
Detroit, Mich., August 29, 1922—Convention of the National Safety Congress.
Milwaukee, Wis., June 11 to 15, 1922—Eighteenth annual convention of Associated Advertising Clubs, 110 West 40th St., New York City.
New York City, May 22, 1922—Annual meeting of the National Highway Traffic Assn., at the Automobile Club of America, 247 West 54th St. Elmer Thompson, Sec., 247 West 54th St.
Olympia, Wash., July 21 to 22, 1922—Midsummer Convention of the Washington Automotive Trade Assn.
Santa Barbara, Cal., October, 1922—Annual General Convention of the California Automobile Trade Assn. Robert W. Martland, Sec., Pacific Bldg., Oakland, Cal.
White Sulphur Springs, W. Va., June 20 to 24, 1922—Summer meeting of the Society of Automotive Engineers. Greenbrier and White Hotels.

FOREIGN EVENTS

- Barcelona, Spain, May 24 to June 5, 1922—Automobile Show. Passenger Cars, Trucks, Tractors and Accessories.
Brussels, Belgium, November 10 to December 19, 1922—Automobile Show.
London, England, October 12 to 23, 1922—International Commercial vehicle exhibition at Olympia.
London, England, November 8 to 18, 1922 (tentative)—Olympia Automobile Show.
Paris, France, October 4 to 15, 1922—Annual automobile show at Grand Palais.
Rio de Janeiro, Brazil, September 7 to November 15—Automobile show during International Exposition.

Stage Set for A. E. A. Gathering

Three special trains are to be commandeered to carry representatives to the annual summer convention of the Automotive Equipment Association at Colorado Springs, Colo., June 16 to 24. The "Chicago Gateway" will leave the La Salle Street Station at 11 A. M., June 17, arriving at Colorado Springs at 3 P. M., June 18. This train will be a solid vestibule car consisting of baggage, club, dining car, regulation Pullman, sleepers, compartments, drawing rooms and observation car and 16 sections.

A like train will be run from the St. Louis and Kansas City Gateways accommodating people in the south and southwest. This will pull out of the Union Station, St. Louis, at 2.15 P. M., June 17, arriving at scene of the convention at 7 P. M., June 18, while the members from New York, New England, New Jersey and Eastern Seaboard points will leave on special train over the New York Central Road which departs from New York June 16, at 8.45 A. M., arriving at Chicago, June 17 at 9 A. M. This train will be switched through the yards and will arrive at Colorado Springs at 1 P. M., June 18.

The two hotels at the "Springs," the Broadmoor and the Antlers, are almost filled and it is likely that the Acacia will be used to accommodate the overflow. Plans for the convention are progressing nicely. A number of prizes, some of considerable value, have been offered for the golf tournament.

Universal Tool in New Hands

The Universal Tool Co., a corporation of New Jersey, has purchased the business conducted at Garwood, N. J., by the Universal Tool Co., Inc., a corporation of Michigan, which has been in the hands of a Federal receiver for the past few months. The sale includes all the assets of the Universal Tool Co., Inc., except its accounts receivable. These accounts are to be paid to Thomas H. Keating, receiver of the Michigan Company, at 9 Clinton St., Newark, N. J.

In addition to manufacturing the Universal cylinder reborer tool and the Ford and Fordson main bearing replacement equipment, the company expects in the near future to make other equipment which will prove as profitable to the jobber as the other well established lines. The officers of the concern are Robert E. Roseberry, president; H. R. McGraw, vice president; Donald McGraw, treasurer, and G. J. Miller, secretary.

Buses for Akron Traction System

Akron, Ohio, has acquired a fleet of motor buses to supplement its traction system. The bus system is patterned after that employed by the Goodyear Tire & Rubber Co., to handle transportation on Goodyear Heights.

New Truck Association Maps Out Its Policies

Final organization of the new truck organization, the National Association Motor Truck Industries, reared on the foundations of the Motor Truck Manufacturers' Association and the National Association of Motor Truck Sales Managers, is about completed. Headquarters are now centered at 1156-57 Book Bldg., Detroit, where Don F. Whittaker is installed as general manager.

This organization is now the only association devoted exclusively to the interests of the truck industry and as such, intends to constantly strive toward better conditions and the advancement of the motor truck in the field of transportation. It is the policy of the association, however, to co-operate to the fullest extent, with all other recognized associations in the automotive industry, lending its support in all matters of mutual interest.

Recognizing the need for better distribution methods throughout the industry, the officers of the Association consider this one of its most important objectives. Through a far reaching and thorough study of these conditions, which have been responsible for too high a rate of dealer mortality, it is proposed to chart out a course which the new dealer organizations can follow with assurance of success. The dealer will be schooled with the most successful proven methods of conducting his business as well as warned against the mistakes and errors which have proven pitfalls for the dealers who have fallen by the wayside during the past few years.

The used truck problem has come in for its share of consideration, having such an important bearing upon the success or failure of the dealer fraternity. It is a common knowledge that a very high percentage of failures is directly traceable to the fact that many dealers have tied up practically all their working capital in used trucks traded in at value, in many cases far in excess of their worth. Many sales in new trucks have been consummated on a basis where it might be said that the dealer bought a used truck rather than that he sold a new one. An effort will be made to determine a fair and equitable basis of valuation of used trucks after definite specified periods of operation or mileage, for the guidance and assistance of all dealers who wish to conduct their business on a business-like basis, trading in used trucks at reasonable values and selling new trucks in such a manner that the dealer may profitably maintain suitable sales and service facilities.

Correction

Through an error, the item concerning E. F. Paepfer, who has recently become associated with the Casco Motors, Incorporated, Portland, Maine, stated that Mr. Paepfer was formerly with the Republic Motor Truck Co., of Atlanta, Ga. This should have read "the Republic Motor Truck Co., of Alma, Mich., and the Superior Motor Truck Co., Atlanta, Ga.

The Gasoline Reserve is Now Very Large

The greatest reserve of gasoline in the history of the industry is now in storage in the United States, according to a statistical summary just issued by the Bureau of Mines, which shows stocks totaling 818,500,000 gallons on hand March 1. The figures indicate an increase of 112,800,000 gallons over the reserve of February 1. The previous high figure set in May, 1921, is topped by 18,000,000 gallons. At the present rate of increase in storage, the Bureau of Mines points out that the billion-gallon point may be reached in the gasoline reserve before the seasonal decline in stocks commences. The amount of gasoline in storage March 1 is 138,000,000 gallons more than on the same date a year ago. Production of gasoline during February was 46,000,000 gallons less than for January, but was 10,000,000 gallons more than for February a year ago. Gasoline was produced in February by 296 refineries, an increase of 4 plants over the number operating in January. Total production for February amounted to 398,223,146 gallons; imports were 4,979,625 gallons; exports were 38,169,593 gallons; domestic consumption amounted to 251,759,440 gallons.

Stocks of lubricating oils reported to the Bureau of Mines show an increase of 15,000,000 gallons during the month of February. The supply of these oils on hand March 1, amounting to 260,000,000 gallons, is the greatest since June, 1921, and lacks but 2,000,000 gallons of the high point reached in the storage of lubricating oils attained in May, 1921.

Stocks of kerosene on hand March 1, were 332,330,245 gallons, an increase of 5,000,000 gallons during February. Production of kerosene for the month was 167,220,226 gallons; exports decreased from 81,100,000 gallons in January to 61,450,000 gallons in February.

Stocks of gas and fuel oils amounted to 1,314,740,284 gallons. The present storage of these oils is 322,000,000 gallons greater than a year ago.

Service Managers to Meet at Detroit

The spring convention of the factory service managers will be held at the Statler, Detroit, May 16 and 17. It is the fifth semi-annual convention, and will be under the auspices of the service department of the National Automobile Chamber of Commerce. Harry Cobleigh, secretary of the service committee, has arranged an unusually good program which includes addresses by two prominent men in the industry. A number of pertinent subjects will be discussed, these including labor adjustments, defective material replacements, interpretation of the warranty, pirate parts, flat rate, etc. Opportunity will be afforded any delegate to introduce any topic for discussion. While it was originally planned to hold the convention at Milwaukee, a mail vote resulted in Detroit which place should make for a large attendance.

S. A. E. Sections Visit Yale in Gasoline Rail Cars

A joint meeting was held on April 21st, between the Metropolitan and New England Sections of the S. A. E., which included a trip to New Haven from New York in rail cars. The meeting was held at Yale University, where the engineers examined the chassis, testing equipment in the Mason laboratory, also listened to and discussed the paper presented by Prof. E. H. Lockwood, of the Sheffield Scientific School, on power losses in the automotive chassis.

The trip from the headquarters of the S. A. E., in New York, to the Harlem River Terminal of the New Haven road was made in two Mack 25-passenger motor buses, where the rail cars were waiting. The rail cars were two of the three Mack 35-passenger rail cars operated by the New Haven system and took the party from New York to New Haven. The trip from the Harlem River to New Haven, 67.2 miles, was made in 2 hours and 40 minutes, an average speed of 25 miles per hour. Simultaneously with the departure of the rail cars, the two Mack buses started for New Haven by road, arriving there just 42 minutes later than the rail cars. The distance by road, as given by the Automobile Blue Book, is 70.3 miles, the time of the buses being 3 hours and 22 minutes, an average speed of 21 miles per hour. The return to New York was made on one of the fast electric trains of the New Haven road, the return trip being to the Grand Central Terminal at Forty-second Street, 72.3 miles. The train schedule called for 1 hour and 56 minutes, for their distance, an average speed of 36½ miles per hour.

The demonstration showed the flexibility of gasoline equipment, both on the highway and on the rails, however, a flexibility which steam and electric railway equipment both lack. On the particular route covered, the density of traffic unquestionably makes the regular steam or electric train the most economical and satisfactory to the public, since frequent service can be given with well-filled trains. Branch lines, on which there is less density, cannot be economically served by the steam or electric trains because of the lack of traffic volume. On many of these lines, even where the mileage is equal to or greater than the New York-New Haven run, there is insufficient traffic to warrant running more than one small train a day, which is generally not satisfactory service to the public. It is for lines of this character that the Mack Gasoline Rail Car has been developed. With these small economical carriers, frequent service can be provided at a profit to the railroad where in many cases even the minimum one-a-day franchise-holding steam train schedule would occasion a loss.

The two cars supplied by the New Haven road were taken from regular branch runs especially for this demonstration. One operates between New Haven and Derby, Conn., and between New Haven and New Hartford, Conn., making 164 miles per day. The other makes a daily round trip between Litchfield and Waterbury. A third car makes two round trips daily over the fifteen mile

branch line between Tremont, Conn. and Fair Haven, Mass.

In a short talk given by W. L. Bean, Mechanical Assistant to the President of the New York, New Haven & Hartford Railroad, during the meeting at New Haven, he stated that the railroads were deeply interested in the possibilities of gasoline rail cars in turning operating losses on branch lines into profits and bespoke the co-operation of automotive engineers in assisting in the development of automotive railway equipment.

Canadian Production Figures Released

Statistics of the automobile industry of Canada for 1920, just compiled by the Dominion Bureau of Statistics for the Department of Trade and Commerce, show that the total production of the three branches of the business, automobile manufacturing, accessories and supplies and automobile repairs was \$137,420,351, as compared with \$101,196,706 for 1919, an increase of \$36,223,645. The value of the car production alone for 1920 reached a total of \$101,465,846, which was an increase of \$20,846,000, according to the official figures. Accessory production was \$19,361,882, which was \$10,789,992 more than the previous year. Automobile repairs totaled \$16,592,623, an increase of \$4,587,653 over the total of 1919.

It is pointed out that the number of automobile manufacturing plants in Canada have increased from 11 to 17 during 1920, 15 of the factories being operated in the Province of Ontario and 2 in Quebec.

Lynn Shaw Added to the N. A. D. A. Staff

The National Automobile Dealers' Association has been fortunate in acquiring the services of Lynn M. Shaw as an assistant general manager, taking effect April 17. Mr. Shaw is at present secretary of the Indiana Automotive Trade Association, a post which he has held for two years. Prior to this office, he was secretary of the Youngstown, O., Automobile Dealers' Association and at an earlier time, assistant general manager of the Elton Motors Co., of Youngstown, the Cadillac distributors for that territory.

Mr. Shaw's addition will further strengthen the association's executive staff. P. F. Drury, assistant manager, has been carrying the burden of the field work since his connection with the N. A. D. A. three years ago, and the expansion of the new service program under the "One of a Thousand" plan has made it necessary to enlarge the executive staff.

General Manager Vane has announced the appointment of J. S. Casey as assistant secretary of the organization in charge of the Information Bureau.

Sale of Connecticut Tire Firm Ordered

Sale of the Kelley Tire & Rubber Co., of West Haven, Conn., to the Armstrong Tire Co., of Garfield, N. J., has been ordered by Superior Court for \$225,000 in cash and \$50,000 in preferred stock of a new corporation to be organized.

Torbensen Axle Undergoes Reorganization

Cleveland interests headed by J. O. Eaton, former president and general manager of the Torbensen Axle Company, have acquired the interest in that company, formerly owned by the Republic Motor Truck Company, and have reorganized the local concern.

Coincident with this announcement comes the news that within the last two weeks orders with shipping specifications attached have been received, which bring the monthly production to over \$300,000.

Mr. Eaton and his associates, constituting substantially the same group of men who directed the company in the period of its greatest prosperity, announce that in connection with the reorganization just completed, the company has been placed in very satisfactory financial condition.

As reorganized, the company has only one class of security outstanding, 80,000 shares of common stock without par value, holders of the old preferred receiving four shares of the new common for each share of preferred. A block of the new common stock has been sold to provide necessary funds and will, it is understood, be offered privately within a short time.

Among the many spectacular stories of growth which the automobile industry affords, few are more remarkable than that of the Torbensen Axle Company, which was organized in a very small way in Newark, N. J., in 1911, and was moved to Cleveland in 1915. Something of this remarkable growth is indicated by the production and sales figures which show that in 1913 the company produced only 222 rear axles, while in 1920 its production totaled 21,798 rear axles and 9,952 front axles for a total sales value of \$5,364,000.00.

The company's balance sheet after reorganization shows fixed assets valued at \$1,421,735, net current assets of \$749,976, and total net assets exclusive of patents, of \$2,257,815, or more than \$28.15 per share.

Average annual earnings for the five years ending December 31, 1921, before Federal taxes, amortization of patents and interest charges, but after depreciation, adjustment of inventory to market and loss on purchase commitments, were \$451,564, or \$5.64 per share of the new common stock. These figures include a write-down in inventory of \$491,020 taken in 1920 and 1921. In 1921, despite adverse business conditions, the company made a small profit.

The management reports operations at a substantial profit for the first four months of the current year, which will be greatly increased by the recent additional business. At the rate of increase shown since January 1st, it will be only a short time until the plant is operating at capacity.

The U. S. Senate Committee on Reconstruction and Production has estimated that the annual motor truck mileage of the United States is 7,150,000,000 and that 1,430,000,000 tons of freight are transported annually over highways by motor trucks.

Possibilities for Truck Exportation Somewhat Brighter

LOWER rates of exchange, better economic conditions and general rehabilitation efforts in foreign countries are opening up possibilities for the sale of American motor trucks. Although export conditions are still unfavorable for business on a large scale, many manufacturers in the United States are making new connections abroad with a view to future business.

The Bureau of Foreign and Domestic Commerce, Washington, D. C., have been looking into the motor truck field abroad with the result that recently some data has been published in Commerce Reports.

Brazil

The report says: Prospects are generally good for the sale of motor trucks in Brazil, especially in the 1½ ton size. Contingent factors, however, are the betterment of exchange and the improvement of roads. While business is improving slowly, the demand for motor trucks in Sao Paulo (in which district there are about 800) will continue to increase, as there is a decided campaign on for the improvement and building of roads. The city of Sao Paulo is more or less the industrial center of Brazil and motor trucks are much used there.

While at present and for some time to come, Bahia offers a poor market for motor trucks, there should be a fair demand for heavy service trucks when the exchange becomes normal, although the high price of gasoline and cheapness of labor are serious drawbacks. Great quantities of heavy goods, such as hides, skins, cocoa, sugar and tobacco are constantly being moved from the warehouses to the docks. At the present time this merchandise is being transported by small two-wheeled carts, capable of carrying about one half ton each, and on account of the large number required to handle the business, the traffic is often blocked. There are not more than a dozen trucks now being used in Bahia.

The market for motor trucks in the Rio de Janeiro district is limited to the city of Rio de Janeiro, the main hindrance to the greater use being the lack of roads outside of the city. The interior traffic is practically limited to oxcarts, the roads being unfit for automotive vehicles. Trucks sold in the city of Rio de Janeiro are mostly of 1½ ton capacity. The 7-ton type may be classed second; with the 2, 5 and 3 ton models next in the order named. The number of trucks in the district is estimated at about 500.

Financial conditions are depressed at present in the Porto Alegre district and the importation of motor vehicles has been reduced materially. Even in normal times, owing to the lack of good roads, the demand for motor trucks in this district is limited and their use is almost exclusively confined to the larger cities. The majority of trucks are of the 1½

ton size, equipped with bodies constructed locally.

Great Britain

The market for motor trucks in the United Kingdom is decidedly unfavorable, the most important factor contributing to this condition in England being the oversupply on account of the surplus army stocks at Slough in Berkshire and the policy of the Government in realizing on these supplies on the deferred payment basis. Agents of motor truck manufacturers state that at present they are utterly unable to move their stocks because of the far more advantageous price and credit terms being offered by the Government, which is selling reconditioned trucks with a six-months guarantee, as low as £50, whereas local dealers have had stocks on hand for over a year, which they offer at £700 to £800.

The market in Scotland is depressed as the result of the general stagnation in trade and industry, and until the hoped-for revival is apparent, the prospects for the sale of motor trucks are not encouraging. In this section of the country the demand will be chiefly for the heavier types, although the light delivery wagons are enjoying increasing popularity.

France

The sale of American motor trucks in France is greatly hampered at present, not only by the French import duty of 45 per cent ad valorem, but also by other adverse circumstances. The difficulties in the Lyon district are due largely to the depreciation of French exchange; the activity of French truck manufacturers, who are able to promise immediate delivery; the existence of large army stocks; and the reported inadequacy of repair facilities for American cars.

Owing to the exceedingly high price of gasoline, motor trucks are not only being used to a small degree in the Limoges district, and the industrial firms are unwilling to substitute the motor truck for the horse until the cost of fuel is reduced. Some large stocks are purchased from the American army stocks and there are a few light models in use, but it is thought that there will be little opportunity for the sale of motor trucks for several years.

Straits Settlements

During 1921 the market for motor vehicles in the Straits Settlements was exceedingly dull, due to the slump in tin and rubber, and there was practically no importation of motor trucks. The current year will undoubtedly witness somewhat better conditions.

A great deal of the hauling in the Straits Settlements is done by oxcarts and handcarts, which is a very tedious and slow method, but comparatively cheap. While there are excellent roads throughout the colony and the Federated Malay States, those on the private estates

are not fit for the use of motor trucks. Many hired passenger cars traverse the roads, carrying both passengers and produce of all kinds. As most of these cars are in bad condition it would appear that they might be supplanted by motor trucks. None of the latter, however, have been introduced during the past year. At present there are only 50 motor trucks in Penang.

Asia Minor

At present the truck market is exceedingly dull in Asia Minor due to the unsettled conditions throughout the Near East. An attractive field for the sale of all kinds of automotive products will undoubtedly be offered in Asia Minor when peace is re-established and the several trade routes leading out of Constantinople are re-opened.

West Africa

British and French West Africa are importing trucks to a considerable extent, and while money at present is scarce, importers are prepared to do business. Trucks are used in collecting the raw materials and transporting them to the railway, river and shipping stations, and for the distribution of imported goods. The seaports have begun to use trucks almost exclusively instead of the old method of head carriage. The ½, 1 and 1½ ton trucks are prohibited by law.

British Guiana

The unsatisfactory financial situation in British Guiana, caused by the low price of sugar, has resulted in decreased purchases of motor trucks, while the recent importation of a tax of \$200 on motor buses and trucks exceeding 12 hp. (R. A. C. rating) has practically prohibited their importation. There are about 100 motor trucks in the colony.

Norway

Norwegian railway circles are considering an extension in the use of automobiles to replace steam locomotives on the lines of lesser importance and on all branch lines throughout Norway. It is estimated that operating expenses can thus be reduced from 140 crowns for locomotives to 91 crowns for automobiles on a 200 kilometer run. The railway officials base their estimate on a 11 ton 80 hp. car. An American car distributor at Christiania has already discussed the project with the railroad representatives with a view to supplying their motor cars.

Trucks Are Big Asset in the Milk Trade

"The amount of milk hauled to Philadelphia by auto truck increased 400 per cent above that shipped in 1920, being over 21,000,000 quarts for the year," says Robert W. Balderson, secretary of the Interstate Producers' Association.

"Less than three per cent of our milk now goes into Cincinnati by rail. It is all carried by auto trucks," according to a statement made by H. B. Berning, secretary of the Cincinnati Producers' Association.

Personals

Forrest J. Alvin, general manager of the United States Motor Truck Co., of Cincinnati, has been appointed president and general manager of the United States Truck Sales Co., of St. Louis, Mo., to succeed J. F. Mackey.

O. F. Conklin has been secured by the Corcoran-Victor Co., Cincinnati, automobile lamp manufacturers, to act in the capacity of consulting engineer. Mr. Conklin was at one time chief engineer and later president and general manager of the Remy Electric Co., of Anderson, Ind.

J. F. Culver has been made general manager of the Dorris Motor Car Co., of St. Louis, Mo., succeeding Webster Colburn, who has resigned to devote himself to other business interests. Mr. Culver will continue as secretary and treasurer of the company as well.

George W. Dill has been announced as director of sales of the Essenkay Products Co., Chicago, Ill. He was formerly with the Dayton Airless Tire Co., of Dayton, O.

S. T. Gorman has been made district sales manager of the Dunbar Drop Forge Co., of Chicago, to serve in the Detroit territory.

Harry R. Graham, of Owen & Graham, Detroit, was elected president of the Detroit Auto Dealers' Association. He succeeds Guy O. Simons.

C. M. Hall, formerly in charge of the New York territory for the Dodge Transmission Co., has become associated with the Black & Decker Mfg. Co., and will have the territory including Indiana, Kentucky and the corner of Ohio which includes Cincinnati and Dayton. His headquarters will be Indianapolis.

John B. Hance, well known in the truck distribution field, has been made sales manager of the L. F. Mullin Co., St. Louis, distributors of Signal motor trucks.

Samuel C. Harvey, general sales manager of the H. J. Koehler Motors Corp., Bloomfield, N. J., has resigned from that position. His future plans are indefinite at present.

R. P. Henderson has resigned from the vice presidency of the Martin-Parry Corp., of York, Pa., and Indianapolis, Ind. Mr. Henderson was formerly with the Cole Motor Car Co.

Frank G. Hood, active in automotive trade work on the Pacific Coast has been made manager of the Reno, Nev., branch of J. W. Leawitt & Co., Oldsmobile distributor on the Pacific Coast.

J. E. Johnson, president of the Johnson Battery Co., has been elected president of the newly organized St. Louis Storage Battery Association.

R. M. Krebs, who has been identified with the sales department of the Indiana Truck Corp., announces the formation of the Krebs Truck Leasing Co., San Francisco, with the slogan "Rent a Truck." Twelve trucks of various capacities will be used, the vehicles to be rented without drivers.

Robert E. Lee has been re-elected secretary of the St. Louis Automobile Dealers' Association. Mr. Lee has served in this capacity for 14 years with the exception of eight months in 1910.

C. D. LeFevre has been made eastern sales manager of the Westinghouse Union Battery Co.

W. L. Leonard has been announced as manager for the Philadelphia branch office of the Miller Saw-Trimmer Co., of Pittsburgh. The Philadelphia address is 141 North 12th Street.

Don Livingston has organized the Automotive Employment Bureau at St. Louis, with headquarters adjoining those of the St. Louis Automobile Dealers' Association, at 3124 Locust Street.

David B. McCoy, advertising manager of the Reo Motor Car Co., has been transferred from Lansing, Mich., to Winsor, Ont., where he has assumed charge of the Reo Canadian business. He is a former G. M. C. executive.

George S. Shugart, vice president and general manager of the United States Tire Co., has been elected a second vice president of the United States Rubber Co.

Frank E. Smith, president of the Republic Motor Truck Co., Alma, Mich., has been added to the membership committee of the National Automobile Chamber of Commerce.

R. P. Tillotson, who has been associated with the Appleton Electric Co., 1701 Wellington Ave., Chicago, manufacturers of "Auto-Reelite," for the past 13 years as Western sales manager and director, will take charge of the California territory which was formerly represented by Keller-White Co., of San Francisco.

Louis D. West, for sometime connected with the CHILTON COMPANY, as Cleveland representative of CHILTON AUTOMOBILE DIRECTORY, has resigned to become associated with the H. L. Rackliff Co., automotive marketing counselors, of Cleveland and New York. He will have charge of the work in Ohio, Indiana, Kentucky and Western Pennsylvania.

Tom H. Wilkinson has been added to the executive force of the Lee Tire and Rubber Co., in the capacity of Pacific Coast representative. He was formerly manager of the San Francisco Branch of the U. S. Rubber Co., and is well known throughout the entire automobile tire trade.

Frank B. Wolfe, assistant comptroller of the General Motors Corp., in charge of cost division has announced his entrance into private accounting practice in Detroit. His connection with G. M. C. began as accounting executive for the United Motors section.

New Incorporations

The Brunson Accessory Co., has been chartered with an authorized capital stock of \$50,000, at Greenville, N. C.

The Dallas Automobile Trades Association is to be incorporated. The association plans to erect a club building at the State Fair Grounds, to cost \$125,000.

The Highway Motor Sales Co., has been incorporated at Kingsville, Texas, with a capital stock of \$10,000. The incorporators are E. B. Brown, H. A. Murray and H. Andrews.

The Lugmat Co., Inc., 42 Chestnut St., Newark, N. J., has been incorporated to manufacture automobile accessories, particularly the article known as "Lugmat." Capitalization is \$125,000.

The Rubber Manufacturing Co. has been chartered at Wilmington, Del., to manufacture rubber tires and other rubber products. Capitalization is \$500,000.

Factory News

The Moreland Motor Truck Co., Los Angeles, Calif., reports large production activity. Men are being added to the working force and the output is being increased. Many orders have been received for the company's latest 1922 models.

The Ruggles Motor Truck Co., of Saginaw, Mich., claims the first entry for the 1922 Michigan Pike tour, in the form of a special truck to carry baggage for the Pike tourists. It will be mounted on a two-ton chassis.

The Kalamazoo Motor Corp., Kalamazoo, Mich., as closed a contract with the Highway Contracting and Equipment Co., of Chicago, calling for over \$500,000 of Kalamazoo

dump trucks with 1½ yard bodies, to be delivered in regular monthly allotments.

The Seiberling Rubber Co. announces that it is just putting on the market a complete line of Seiberling repair materials and accessories.

The American Felt Co., announces that its felt cutting shop has been opened at 105 Fort St., Detroit. The principal offices of this concern are located at New York, Boston and Chicago.

The Republic Rubber Corp., Youngstown, O., reports that it is on a profitable operating basis for the first time in several years.

The Williams Hardware Co., Clarksburg, W. Va., will increase its capital stock to \$500,000. The company, which recently celebrated its 27th anniversary, carries a large stock of automobile accessories.

New Agencies

The Gorey Automotive Parts Co., 354 West 50th St., New York City, with branches at Brooklyn and Newark, has been appointed service representative for the distribution of Torbensen repair parts for all models of Torbensen axles.

The Beck & Corbitt Iron Co., has opened a branch at 3010 Locust St., St. Louis, where it will carry a complete stock of automobile accessories, replacement parts and garage equipment.

The Sherlock Motor Truck Co., of Los Angeles, distributor of Master trucks in Southern California, has opened up a San Diego office with a full line of parts. The office is located at Sixth and I Sts., in the heart of the commercial district.

The Federal Motor Truck Co. has established a factory branch at San Francisco, with a completely equipped sales and service plant at 1123 Post St. J. H. Hartzell has been made vice president; E. S. Jones, manager; and G. F. Currie, secretary and treasurer.

The Carpenter Tire Co., 3908 Washington Blvd., St. Louis, Mo., has been appointed distributor for Corduroy tires and tubes, manufactured by the Grand Rapids Tire & Rubber Co.

The Simms Magneto Co., will open a branch office and show room at 5781 Woodward Ave., Detroit. L. F. Acker has been appointed manager and will be given supervision of the Ohio and Michigan territory.

The Hinckley-Myers Co., manufacturer of approved complete garage and service equipment, has installed an eastern sales and executive office at 2-146 General Motors Bldg., Detroit, Mich.

Removals and Trade Changes

The Sharon Pressed Steel Co. has moved its New York offices from 66 Broadway to the new warehouse in the Dodge building at 47 West Broadway, corner of Murray St., where a complete line of trucks, trailers, skids, and other pressed steel production will be carried for demonstration.

The Pyrene Manufacturing Co., Inc. has moved into its new fireproof factory at 520 Belmont Ave., Newark, N. J. The general offices formerly located in New York City and all manufacturing departments will now be under one roof. Warehouses and all branches of the company are now located at Chicago, Atlanta, Kansas City and San Francisco.

The Kokomo Automotive Mfg. Co., Kokomo, Ind., is the new name for the Automotive Accessories, Inc., maker of windshield wings, mirrors for trucks and passenger cars, etc. The company has moved into its new factory and is increasing its output.

NEW COMMERCIAL CARS



Noble Introduces a New Light Model

IN designing its new model A-21, the Noble Motor Truck Corporation, of Kendallville, Ind., has deviated somewhat from the established characteristics of a strict speed truck job for reasons of greater universality of service. In the first place it has a rated capacity of

1¼ tons; secondly, it has a range of speed up to 31 m.p.h.

As may be evidenced from the following this model is assembled from units of known repute. A 3½ x 5½ "Buddy" Buda provides the power. Ignition is through an Eisemann magneto and carburetion is ac-

complished by a Stromberg. The cooling system includes a Long radiator of the fin and tube type.

From the engine the power is transmitted through a Fuller multiple disk clutch to a Fuller transmission. From this point the power is carried through a driveshaft of Blood Bros. make, to a model 1501 Sheldon rear axle. Front axle is also of Sheldon make, being a model 33-FA-500.

The Sharon pressed steel frame is supported by four alloy, semi-elliptic springs, all of which are anchored by nickel steel U-bolts. Indestructible steel disk wheels, standardly equipped with 34 x 4 Miller cord tires, are used. Regular equipment includes: Steel dash, vacuum feed, electric starting and lighting, Alemite lubrication and linoleum covered foot and running boards, aluminum bound.

This new job may briefly be described as possessing the same general line and type of construction as embodied in the whole Noble line. In view of its 130 in. wheelbase, this new model is stated to accommodate an eighteen-passenger bus. Price with complete equipment is \$1840.



New Model A-21 One and a Quarter Ton Noble Chassis

Trailer Truck Roll-Bed

THE Trailer Truck Co., Nashotah, Wis., is offering a new removable roll-bed for trucks, especially adapted for handling lumber. This device, which can be applied to semi-trailers and four-wheel trailers as well as trucks, is claimed to facilitate lumber hauling and afford savings in time and delivery costs.

This unloading device is made either with plain bearings or with roller bearings to suit the purchaser. The two rear rolls are studded, but studs can be removed if a smooth roll is necessary. The frame is assembled with gussets and angles at all corners. All parts are bolted, not riveted. The frame is of structural steel channel, which feature permits it to be lifted bodily and set in place.

The removable feature is particularly valuable, as other materials besides lumber can be hauled. No holes to drill, no bolts, no tools of any description are necessary in putting on or taking off this device.

Two short stakes, bolted to the roll-bed frame, one on each side, register with stake pockets already on the truck. The remaining stake pockets are used for the insertion of regular stakes, for which they were originally intended. Thus no change

in the truck platform or body is required.

The two rear rolls are held from turning while the truck is in transit with a load of lock bars. Unloading is accom-

plished by applying an unloading wrench to the end of either of the two rear rolls.

The time saving can be appreciated by the fact that with the use of this device the ordinary load requires from three to five minutes to unload as against thirty to sixty minutes by hand.



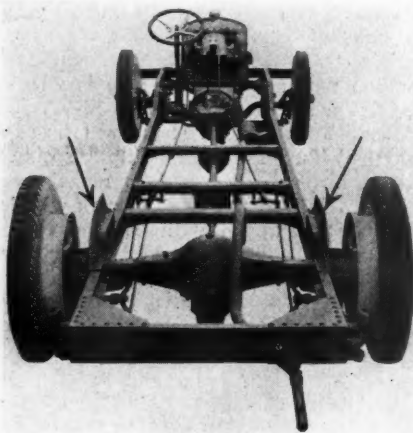
Showing the Removable Roll-Bed Device Attached to the Platform of a Lumber Truck

New Fageol Bus Radical Departure From Conventional Design

UP to the present time but few manufacturers of motor vehicles have taken motor bus transportation seriously enough to engineer and construct a vehicle especially and exclusively for this service. Fageol Motors, Co., of Oakland, Cal., is one of the few to take the initiative. This company recently announced an inter-city motor stage, designed and built exclusively from the bumper to the tire carrier for motor bus service.

der, 4¼ in. bore x 5½ in. stroke, of high compression type with overhead valves and overhead camshaft. At governed speed it develops 68 hp., which is sufficient to operate the stage with its 20 passengers and driver at a speed of 52 m.p.h.

The tread instead of being the usual narrow 56-in. width, is 68 in. wide, insuring absence of side sway and freedom from danger of capsizing. Due to weight distribution the same size tires, 36 x 6 in. cords, are used on all four wheels.



Rear Elevated View of New Fageol Bus Chassis. Note Special Body Supports

Some striking features of construction and difference between this job and others of similar nature, which have been reconstructed from motor truck chassis or rebuilt touring cars, are noticeable. The unusual low hung construction—the running board or step is only 16 in. from the ground and the floor inside the stage, 20 in. To provide dependable power, a special engine was designed, which is now being built by the Hall-Scott Motor Co., Berkeley, Cal. This unit is a four-cylin-



Front End of the Special Fageol Bus Chassis
Arrows indicate three special features of construction

The metal work of the body is entirely aluminum and the inside is finished in hardwood veneer stained in French gray. The ceiling is lined with cloth of silver, which lends itself well to the indirect interior lighting, the lights being concealed in the insides of the top and reflecting against this silver sheet. The seats are luxuriously upholstered and covered with genuine leather.

Individual doors to each seat are full width limousine type, extending all the way to the running board. Windows are hand controlled and disappear in the doors. At the rear is an observation and smoking compartment, giving occupants of this seat a full view through plate glass from the rear of the vehicle.

Trail-Ford, a New Innovation in Trailers

A new innovation in trailers, the Trail-Ford, is being offered the trade by the Automotive Utilities Corp., 408 Detroit Savings Bank Bldg., Detroit, Mich. This two-wheeled trailer outfit was designed especially for use in connection with a Fordson tractor. It has a specially designed assembly for hitching up to the rear-axle housing. Notable among its constructional features is a new type of spring suspension.

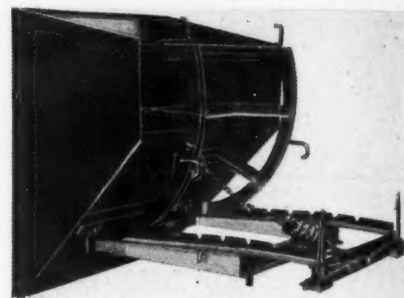
A channel iron construction, termed the wishbone, which is assembled immediately underneath the main frame, is so constructed and connected to the main frame of the trailer to cause the trailer to turn in the very tracks of the tractor. All draw-bar pull is taken through a special assembly of the king plate and bolt.

The spring assembly consists of cast steel heads riveted on either side of the main frame and floated on two sets of three coil springs. The springs are supported by brackets similar to those riveted on the main frame.

This outfit, including trailer, tractor and pneumatic tires, sells at \$1800, including war tax.

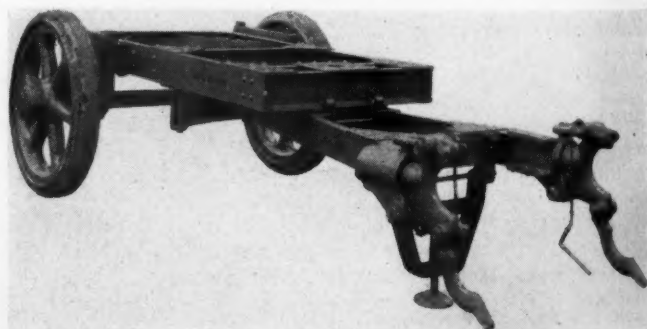
American Automatic Rolling Dump Bodies

The line of American Automatic Rolling Dump Bodies put out by the American Production & Trading Co., 4801 S. Morgan St., Chicago, Ill., designed to combine speed and efficiency, can be mounted on any make chassis from ¾-



American Automatic Rolling Dump Body in Position of Discharge

tons up. They are claimed to possess the following features of construction and advantages in operation: Location of body well forward, for more even distribution; specially designed latch with safety appliance, automatic in action; rolling dogs,



General Design of Trail-Ford Two-Wheel Trailer With Its Unique Method of Coupling to the Fordson Rear Axle Through the Special Clamps as Shown.

which engage under cross bar, in combination with the front latch, securing the body at four points and holding it rigidly upright; and knife blade track, which prevents sand or wet mix from derailing the body.

The prices range from \$100 to \$220 f.o.b. factory for bodies with capacities ranging from 27 cu. ft. to 40 cu. ft.

Heil Gravity Body

IN order to meet a constantly increasing demand among road contractors for substantial, gravity body for mounting on a one-ton Ford truck, the Heil Company, Milwaukee, Wis., has designed and put on the market such a body.

This body is offered in three sizes, namely, one, one and a quarter, one and a half cu. yd. capacities. It is constructed of No. 12 gage steel, welded inside and outside by the electric process. This process makes it water-tight, a feature important in the handling of wet mix, or concrete, as it is received from paver before it is dumped on the road bed.

The upper edge of the body is flanged over $2\frac{1}{2}$ in. and down 1 in. for increased strength and rigidity.

Balance is such that by releasing a lever the weight will tip it over to a dumping angle of 80 degrees. Mechanism consists of a ball and socket arrangement.

A special hanger bracket is attached at the end of the body sub-frame. When the hooks are released, the body rolls over until a ball fits into this special hanger. The body continues to roll over until its action is arrested by a control rod which passes through a channel connecting the two longitudinal sub-sills. On these control rods are placed heavy

springs which absorb all the jar or shock from the truck.

The prices are as follows: One yard body, \$100; one and a quarter, \$110, and one and one half, \$120. These prices are f. o. b. Milwaukee.

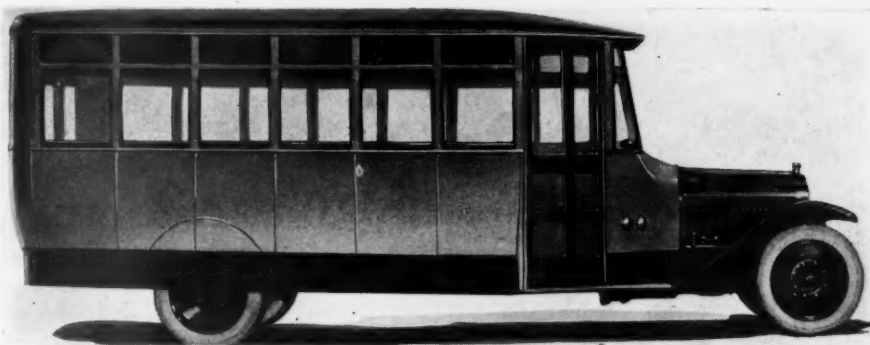
Twenty-Five-Passenger Bus Weatherproof's Latest

The Weatherproof Body Corp., Corunna, Mich., announces a new addition to its line of bodies, truck cabs, and school and touring buses; a twenty-five passenger interurban bus.

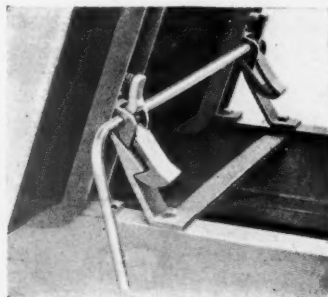
In this body, mounted on a special White chassis, instead of having the usual square box effect in front, the sides have



Interior Furnishings Pattern Pullman Specifications



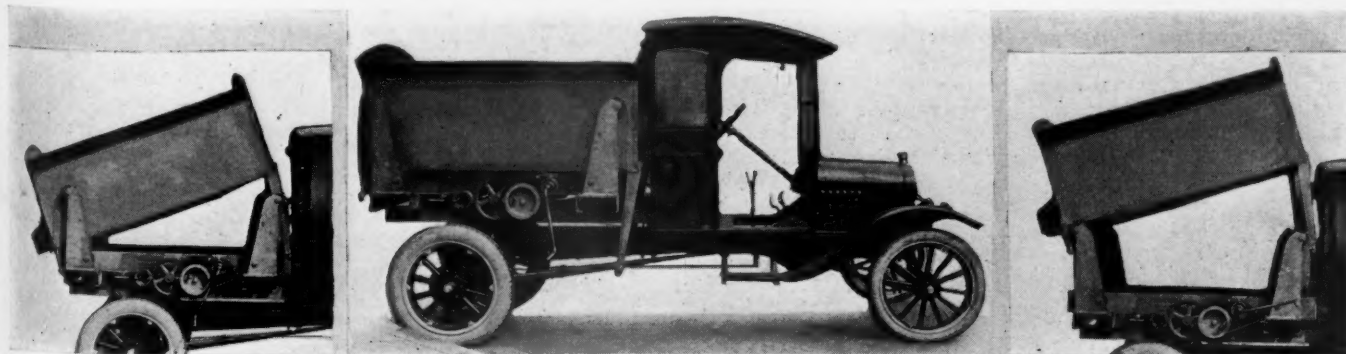
The Sides of This Twenty-Five-Passenger Bus Attractively Converge to a Narrow Windshield



Above: Note Simple and Efficient Locking Device.

Left: Ball and Socket Arrangement Holds Body in Exact Position.

been converged to a narrow windshield effect to meet a steel cowl which is drawn down to fit the hood over the engine. The body measures 19 ft. 6 in. in length from the windshield to the back and is fitted with a folding front entrance door. Interior furnishings are such as to provide maximum comfort to passengers. The seats, which are 34 in. wide, are fitted with special cushioning. Briefly, this body is equipped with Pullman curtains, dome lights, push buttons, heating pipe ventilators and other refinements required by a modern motor-bus for long distance travel. The workmanship and finish of the exterior is attractive and appealing. The body is built and mounted so as to obtain as low a floor level as possible without interfering with the requirements of road clearance.



Views of the New One-Ton Mahlow & Wyckoff Coal Hoist Body for Light Chassis

The body is of steel and weighs, ready to attach, 750 lb. One of its foremost features is the wide range of height and angles attainable. Maximum height attainable is 6 ft. 2 in. front, and 8 ft. 1 in. rear. Hoisting is accomplished by four cables which wind around four drums. As the two forward drums are larger, the body is caused to raise higher in the front. The front end can be raised independent of the rear. The body measures 6 ft. long x 4 ft. wide x 20 in. deep.

New Dump Body for Ruggles Two-Tonner

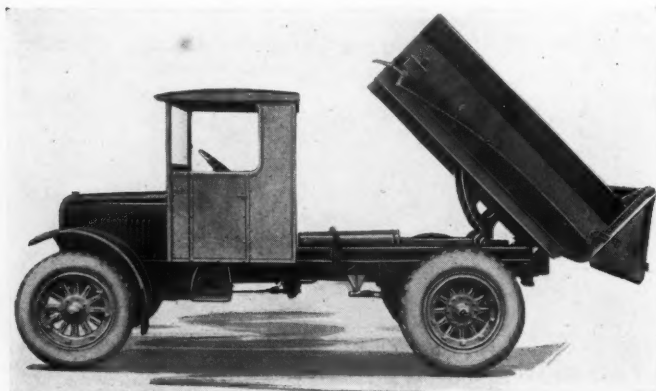
The Ruggles Motor Truck Co., Saginaw, Mich., announces a new dump truck for use in handling coal, dirt, gravel and other materials.

This new equipment consists of a Woods steel dump body mounted on the standard Ruggles two-ton chassis and equipped with the Woods horizontal hydraulic hoist. The dump body has a capacity of one and one-half and two yards.

The chassis has a 38 hp. engine with 4 in. bore and 5 in. stroke. The rear axle

is furnished with two seating arrangements, one adapted particularly to interurban bus operation and the other designed for city passenger work. The interior of the bus is finished in paneled oak with rattan seats. It is complete in every detail including non-rattling adjustable windows, complete buzzer signal system, front entrance door, controlled from driver's seat and rear emergency door. Special attention has been paid to the front door design. The step is low and broad, making it particularly safe against accidents.

The bus rides on 36 x 6 cord tires all



The Ruggles New Two-Ton Dump Truck.

is of the double reduction type with airtight steel housing to protect the working parts from dirt, water and other harmful substances.

The driver's seat is roomy and comfortable with deeply padded cushion springs and plenty of arm and leg room.

Standard equipment on this truck consists of oil lights at front and rear, tools and kit, jack, wheel puller and hand tire pump, seat and cushions, hand horn.

GMC Offers Special Twenty-Passenger Bus

Embodying several new features particularly designed and fitted to motor bus work, the new twenty-passenger motor bus, just announced by the General Motors Truck Co., offers another fine unit of transportation in the bus field.

By combining a long wheelbase with long and flexible semi-elliptic springs, perfect riding qualities is said to have been given the chassis. The body is roomy and overhangs the frame but slightly. Bouncing, sidesway and whipping is overcome by the long wheelbase and the fact that the frame overhangs the rear axle only a few inches. The power plant provides a road speed of 30 m.p.h.

The bus body for this new equipment

around. One other new provision, which is of special GMC design, is the fuel tank, located outside, and filled from there without inconvenience or fire risk. A vacuum system carries fuel to the engine.

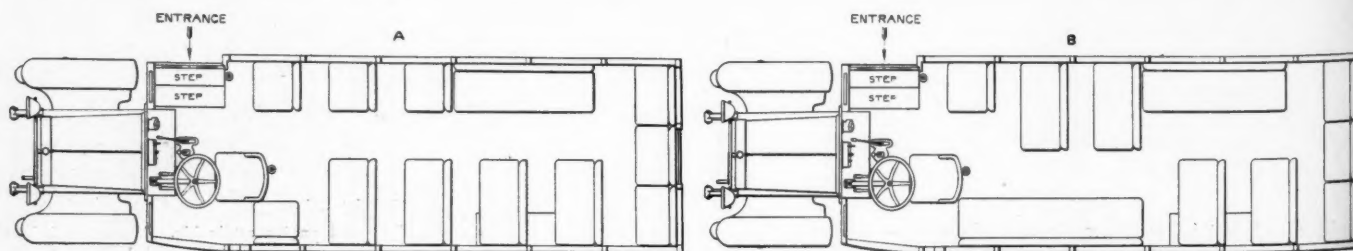
In addition to the two styles of body,

tached to ceiling, four dome lights, four ventilators and bumper at rear of body, tool box under rear seat, are provided as standard equipment. Body is also constructed for installation of tire carrier, rear emergency door and heaters, if desired.



GMC 20-Passenger Bus. Note Facility of Entrance

the bus chassis will be sold alone in cases where special body equipment is demanded.



Plans of Seating Arrangement for (a) Interurban Use; (b) City Use

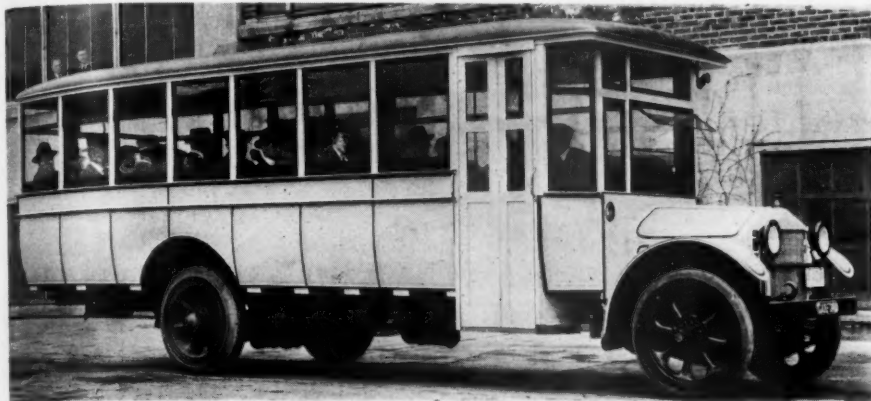
Garford City Coach

The Garford Model 51 City Coach, just announced by the Garford Motor Truck Co., Lima, O., was primarily designed for the ease, comfort and rapid transit of passengers. It is of special structure throughout, both in the design of the special chassis and special body.

Its engine provides a wide range of engine speeds and possesses accessibility for inspection, repair and service. With the frame only twenty-five inches from the ground, one step only is necessary when entering or leaving, thus facilitating rapid

range of gasoline tank; the position of all control levers, and the location of the driver's seat.

The body provides a seating capacity of from 25 to 29 passengers, and contains ample aisle and seating space. It is equipped with cross-wise seats having either rattan or imitation leather upholstery; heating and lighting system; electric lights, electric buzzer system with push buttons at each window post; entrance door, folding type, on right side of body, operated by driver; rear emergency door and advertising panels.



Exterior View of the New 25 to 29-Passenger Model 51 Garford City Coach



Showing Fully Furnished Interior

loading or unloading. The tread is wide to prevent body sway. The springs are long and flexible, and the brakes provide an abundance of braking power. Special steel cushion wheels are a part of the equipment. Other features are the ar-



Two and a Half Ton Republic Equipped With a Spring Scraper for Maintaining Roads

Road Scraper Fitted to Republic Truck

Republic Truck Sales Corp., of Alma, Mich., is now equipping its 2½-ton motor truck, known as the Republic Good Roads Maintenance Truck, with a spring scraper for use in maintaining gravel and other roads. For a truck to qualify in this service it must have sufficient power to give the desired lugging power at slow speed and sufficient weight to hold the scraper hard against the ground. A speed of between 8 and 12 miles an hour seems to be the most satisfactory, at which speed all holes and ruts are evenly filled.

The scraper itself consists of a blade edged with ¾ by 2-in. steel mounted on four steel springs 6 in. wide, which in turn are mounted on a round hollow bar which is adjustable by means of a chain and ratchet post. The bar is mounted on a 2 by 6-in. oak timber through adjustable brackets, and this timber is then mounted on the chassis frame, with heavy brackets and substantial braces. When not in use the scraper is raised and gives a clearance of 8 in. under the lowest point.

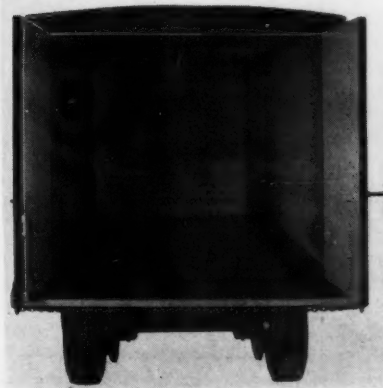
To provide for night work where the traffic is too heavy for day maintenance, special lights are attached and operated by the motor-driven generator and storage battery for effectively lighting each side of the road.



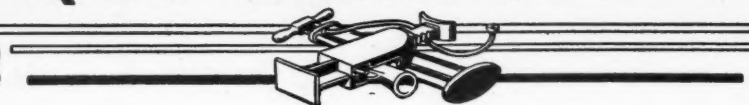
Mulholland Full Van Bodies

To satisfy a demand for bodies to be used in long distance motor trucking the Mulholland Co., Dunkirk, N. Y., recently placed on the market a full van body. Interior and exterior views of body and cab are shown. This body is offered in four sizes, offering loading capacities of 14, 15, 16 and 17 ft. back of the driver's seat by 7 ft. wide inside. The framework is all on the outside. This construction together with the heavy wrought-iron pillars gives a smooth interior. Paneling is of light waterproof plywood. Rear doors are full length and the tailgate is 24 in. high. Other types of doors and tailgates are optional. The interior view of the cab shows a berth for an extra driver, ventilators in sides, ventilating windshield, spring cushions and back with a lock compartment for clothes, etc.

Read the June Issue
The Billion Dollar Number

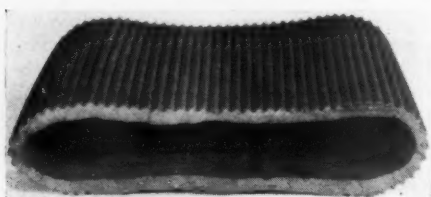


TRUCK EQUIPMENT AND APPLIANCES



Corrugated Inner Tube to be Marketed on Big Scale

The Corrugated Rubber Corp., 25 West Forty-third St., New York City, recently organized with a capitalization of \$1,500,000, will shortly commence production on the Corrugated Inner Tube. This tube is considered a great advance both in process of production and quality of product. All assets, including the machinery and power plant, were purchased from the No Ceem Rubber Corp., which concern



Cutaway Showing Cross Section of the Seamless Corrugated Inner Tube

had already developed manufacture on a commercial basis, eliminated technical difficulties, and demonstrated the product's efficiency and advantage. The Edward A. Cassidy Co., Inc., national distributor of automotive products, will continue to be the exclusive sales representative throughout the United States.

The Corrugated Inner Tube is moulded in a perfect ring, oval in cross section, without spaces, seams or creases. The valve is vulcanized directly into this ring and thoroughly reinforced. Circumferential corrugations maintain air spaces between the tube and the casing, preventing overheating and "freezing." Uniform distribution of material is claimed, insuring equality of inflation and pressure on the tube. Other advantages claimed are: It floats free from the rim before inflation, preventing pinching. Elimination of vulcanizing accelerators in its production, preserving elasticity. It is made in only five operations accomplished by semi-automatic machinery, as compared with eighteen or twenty ordinarily required. Extra heavy red antimony rubber is used.

The process of manufacture is as follows: The rubber is first broken down, made soft, and compounded with antimony. It is then put through a tubing machine, adjustable as to size and thickness, which turns it out in a round tube, like a sausage casing. It is in plastic form, but firm enough to be easily handled and shaped. It is cut to length of tube required and transferred to the assembling room. Here it is bent in a circle and formed. Valve, inner ring and base patch are inserted from inside of tube, and ends are then joined and kneaded together, adding outer base patch.

The tube, still in its soft state, is now completely formed and ready for baking.

It is placed in a vulcanizing machine and as heat is applied to the outside and high-pressure, hot vulcanizing gas automatically to the inside of the tube, the vulcanization requires but twenty minutes as against seventy minutes with the old process. The machine is opened, the tube removed, all finished and ready for testing and packing.

National-Standard 5-Ton Jack

Included in the line of jacks offered by the National-Standard Co., Niles, Mich., is a 5-ton jack, known as the No. 50 Standard. This jack has a five-ton lifting capacity and is a combination geared-ratchet with machine cut gears, and flat springs, which is claimed to make it one of the easiest operating jacks on the market.

It was designed to withstand severe service, being sturdy and rugged in con-



National Standard Heavy-Duty Jack

struction. Its height with bar down is 13 in., with bar raised, 20 in., and its weight is 28½ lb. Retail price, \$21.70.

Standard Governor for Ford Truck

In announcing its latest product, known as the Standard governor, which is for Ford attachment, the Kokomo Brass Works, Kokomo, Ind., makes the statement that this governor was designed expressly for the Ford truck.

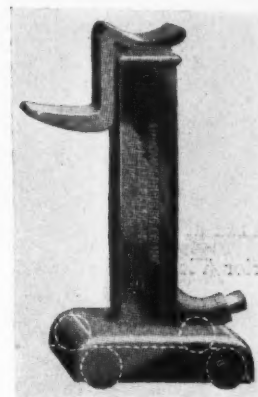
A Ford truck equipped with this governor, it is said, can be automatically regulated to any maximum speed that the owner desires. And, although set for a certain speed, it can be instantly and easily throttled down. The claim is made that the Standard governor not only holds the speed constant under all loads on all grades, but reduces chassis depreciation and permits economy of operation as well.

The installation is simple, the drive being taken from the camshaft. It is fitted into the generator opening. The entire job of attaching can be accomplished in less than an hour. The retail price is \$25.

Arrow-Grip Jack for Trucks

The model No. 302 Arrow-Grip jack, made by the Arrow Grip Mfg. Co., Glens Falls, N. Y., is particularly adaptable to the needs of those engaged in truck operation. The construction is simple and along new lines. The lifting gears are of the worm and nut type.

Four rollers in the base permit the jack to be placed in position or withdrawn quickly and easily. As the weight is taken the rollers compress into the base,



The Phantom Rollers Explain This Jack's Portability

giving a broad and solid foundation. This jack like others in its line is full handle-controlled. Lifting capacity, 6000 lb. It is 11 in. high lowered and 18 in. raised. The price is \$12.50.

Onli-1 All-Purpose Socket Wrench

A wrench that is simple in construction and utilitarian in a number of respects is being offered through jobbers to dealers by the King Tool Co., Asbury Park, N. J. Its action is described as being simple, smooth and powerful. It comprises with its extra sockets a whole set of wrenches in one tool.

The tool is simply a steel tube through which a bar, with bevel gears at the corners, carries the turn of the handle to the turn of the nut. Inaccessible places where an ordinary wrench cannot be employed are made accessible because of the bevel-gear drive arrangement. Its usefulness is further increased by another feature, a socket pin, which is so made that it can be locked, permitting the tool to be used as a solid wrench with the length of the handle as a lever. This tool is really a combination gear-drive, solid and ratchet wrench.

The Onli-1 wrench is entirely of heat-treated steel and is packed in a black Japanned, strong, neat, metal box, that can be conveniently carried anywhere. The list price is \$7.50.

New Bong Battery

A new battery featured by the accessibility of its parts is being introduced by the Bong Battery Corp., 1475 Michigan Ave., Chicago, Ill.

The positive element consists of a series of cylinders, somewhat similar to a pencil, held in a grid, where their tapered necks fit into a converging collar, which in turn is held securely by a lock nut. This construction has eliminated the separator because the cylinders held securely

plugs. Additional information concerning it will be supplied upon request to the Champion Ignition Company.

A certificate of incorporation has been issued to the Porto Rico Tire & Rubber Co., Inc., San Juan, P. R., the incorporators being Sres. A. Panzardi, L. Garcia Mendez, Ignacio Guasp and J. Gutierrez Guasp. We have just received word from Sr. Santiago A. Panzardi, general sales and service manager of Santiago A. Panzardi, Inc., San Juan, is not Sr. A. Panzardi mentioned above nor is his company in any way connected with the Porto Rico Tire & Rubber Co.

Excellight Hand Lantern

The Excellight Co., Forestville, Conn., is offering a hand lantern of the military type which is stated to be foolproof on account of its rugged construction and block type connection arrangement.

It is regularly furnished with two extra bulbs, G. E. type; highly polished, silvered reflectors; adjustable focusing device, and wire reinforced glass $\frac{3}{8}$ in.



Showing the Excellight Hand Lantern Complete

A lamp such as this has no end of uses

thick. Its aluminum case makes it light in weight. Price: Style A, equipped with 3-volt bulbs and two No. 6 dry cell Columbia batteries or any other standard make, \$13 f.o.b. Forestville, Conn.

Russel Develops Axle for Steinmetz Electric

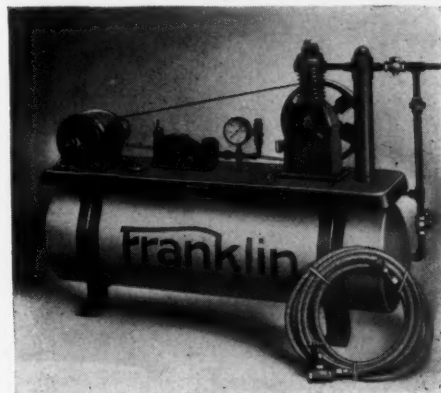
The Russel Motor Axle Co., Detroit, Mich., recently developed a novel double reduction axle for the Steinmetz Electric Motor Car Corp., Arlington, Baltimore, Md., for use in its $\frac{3}{4}$ ton electric vehicle. The axle proper is almost identical with the Russel Model 2400-B of $\frac{3}{4}$ -ton capacity, but has special brakes for the peculiar conditions imposed by the use of an electric motor and storage battery.

Hol-Fast Piston Clamp

A tool for holding a piston securely in the hands or in a vise for the purpose of fitting wrist pins or any other work on a piston is being manufactured by the Power Implement & Machine Works, Modesto, Cal., and distributed by the Allied Industries, Inc., San Francisco, Cal. It is made of fine malleable castings and is readily adjusted by turning one of the handles.

Franklin Air Compressor

The Franklin Air Compressor Works, Norristown, Pa., in presenting its latest air compressor to the trade states that a distinct feature is incorporated in this machine. It is a separator which prevents the intake of oil while pumping air. This separator is drained by a pipe line running to an automatic pressure control switch, through which it exhausts at every stopping of the motor. In this manner any particle of oil, water or other



The Franklin Air Compressor Complete With Motor, Etc

matter which, obstructed by the vertical web, has gravitated to the bottom of the separator, is blown out. It also acts as a pressure release, preventing the starting of the motor against high pressure in the tank. The quality of the components, ease of adjustment and simplicity of operation are other points emphasized by the manufacturer.

Plymetl for Body Panels

The Haskelite Mfg. Corp., Chicago, Ill., recently developed a specially prepared panel for use on the sides of commercial bodies, instrument and dash boards. Plymetl consists of three veneer plies glued together with a waterproof glue and faced on one side with a thin sheet of steel, firmly cemented to the wood.

The steel ordinarily used for the face is of number 28 gage and smooth level finished surface, obtained by a special process. The Haskelite panel surface, which is the other material used, is of three-ply construction and $\frac{1}{4}$ in. thick.

Before this material was offered to the market it was put through a rigorous test to determine its vibration and water-deteriorating resisting qualities. The tests, it is stated, proved conclusively its adaptability for commercial body work.

This material can be readily fabricated or cut with a steel spring band or hand hack saw and can be fastened into position by nails or screws at all four edges. Although it is permissible to fasten at intermediate points it is pointed out as unnecessary, as the natural tendency of the panel to become concave on the metal side presses it firmly against the body standards.

Because of its heat insulating qualities and its curved shape and swelled side possibilities it is said to have found special favor for use in framing motor bus sides.

A. C. Brings Out a New Spark Plug Cabinet

To increase the value of an advertising campaign the manufacturers of AC spark plugs, the A. C. Spark Plug Co., of Flint, Mich., have brought out a unique and ingenious counter cabinet that is to be known as the "AC Quick Seller." This cabinet was designed and decorated to preserve the impression of all AC advertising by providing an effective tie up between the pages of leading magazines, billboards, and the store of the dealer who sets it up.

The "AC Quick Seller" is made to hold a complete line of AC Spark Plugs, from which any make or model engine can be equipped. Inside the cabinet is a simple chart that shows at a glance the correct plug for every motor.

Because of it dealers are also enabled to determine the exact condition of his spark plug stock, thereby facilitating ordering and invoice. The cabinet also preserves the package, keeping it intact so that the customer may be assured of getting what he ordered.

The "AC Quick Seller" is being offered through all jobbers who handle these



Disassembled Units of the Bong Battery



SERVICE AND REPAIR DEPARTMENTS



How This Dealer Did a

Gross Business of Nearly Two Million in Three Years

Started Seven Years Ago With Practically Nothing, But Today Owns a Very Substantial Business. Recently Invested \$12,000 in New Shop Equipment. Says Service is Absolutely Necessary to Successful Truck Merchandising

By C. P. SHATTUCK

IF you are pessimistic and believe that the small truck dealer with little capital cannot achieve success in merchandising motor highway transportation, read every word of this article which has to do with a live wire, successful dealer of 1922. I say successful, not because he has been and **IS MAKING MONEY TODAY**, but because he entered the industry with hardly enough capital to pay for a demonstrating truck.

Today he has \$250,000 invested in buildings, land, parts and service station equipment, and he recently purchased \$12,000 worth of new machinery and improved time and labor saving service equipment, twice led the dealers of the country in gross sales for the year, and in March of this year sold 24 trucks.

Opportunity Created by Advertising

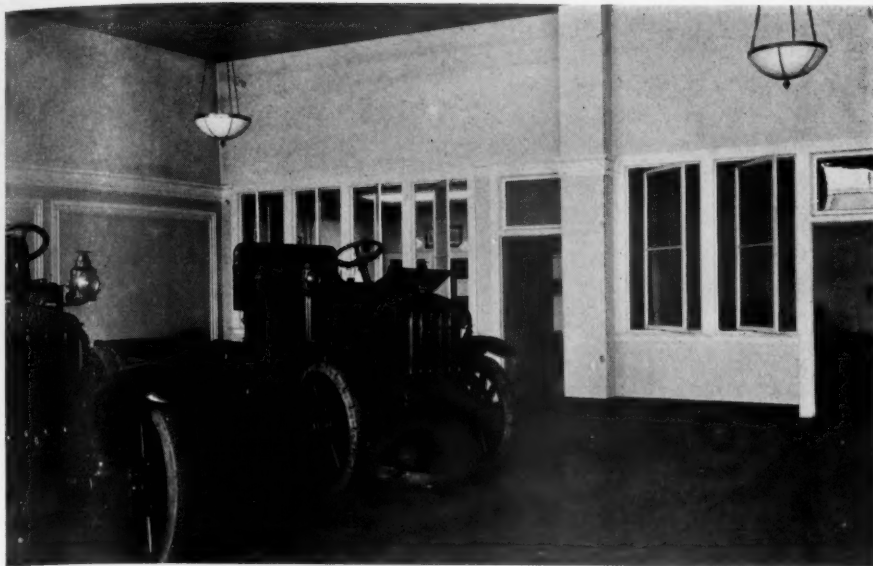
In 1915 the dealer referred to in this article was a salaried young man, a small unit in a large organization, but he was ambitious, he could visualize things and he was analytical. He was also a constant reader of trade magazines. One day opportunity tapped at his door and he welcomed her. The opportunity was in the form of an advertisement in the **COMMERCIAL CAR JOURNAL** of a truck manufacturer. This advertisement presented in concise form the story of a Western dealer who was making a success selling trucks. The advertisement was the opportunity, for the young man logically argued, that if this dealer could achieve success so could he. He has and

so has the truck manufacturer who obtained a dealer who in 1919, 1920 and 1921 did a gross business of nearly two million dollars! The exact figures—which are in the possession of the writer—show that in 1919 and 1920, this dealer led the dealers and distributors of the country, which all goes to show that it “pays to advertise.”

After studying truck merchandising methods for some time he purchased a demonstrator during May, 1915. All the capital this young man possessed was tied up in this vehicle. Office and service station he did not possess—but he did have sales ability and sound business methods. He sold the chassis, bought another and sold that, reinvesting his profits in trucks. And very shortly after-



Entrance to the Ludlum Motor Car Company's Show Room. Insert: G. H. Ludlum, President



A Corner of the Newark Show Room, Showing Pivoted Windows of Office of G. H. Ludlum, President of the Company

wards he diverted part of his profits to parts and a service station, for his study of motor highway transportation proved to him that **NO DEALER COULD HOPE TO BE SUCCESSFUL UNLESS HE BUILT FOR SATISFIED CUSTOMERS, KEPT BUYERS SOLD BY SATISFACTORY SERVICE.**

In 1918 the volume of business required larger quarters, a bigger service station and, of course, a greater investment in parts, so a building was taken over. The factory recognized the worth of this dealer by giving him five counties and a part of another. The following year the gross business was the highest of any dealer in the United States, but this only spurred the dealer on to greater efforts, and in 1920 he repeated with a gross over one hundred thousand dollars greater than the preceding year. And although 1921 is said to have been a poor year for truck dealers this dealer's sales in gross was a very tidy sum. Being a business man he foresaw conditions and reduced expenses; not by indiscriminate cutting but by a careful reduction, by weeding out the incompetent and plugging the leaks. As a result he made real money last year.

The Reasons for Success

If the reader expects the presentation of novel or unusual sales or service methods to explain the success of this dealer he will be disappointed, for there are none. On the other hand the success of this dealer is **due to the practicing of stable business methods plus intensive sales efforts and close attention to business.**

This dealer is not of the type who, having arrived, plays golf, visits Palm Beach and the seashore, leaving the carrying on to subordinates. On the other hand he is on the job and works harder than any of his employees and believes any and all customers should have prompt access to him. He believes that personal contact is valuable and should be maintained after the sale. This dealer does not hide himself in his private office, and the driver is as welcome as the owner. The value of such a policy from a sales standpoint can hardly be overestimated.

The Sales Policies Are Simple

This dealer believes that before a salesman can sell, he must first be sold on the organization, the product sold and the value of service. In this establishment salesmen are **not turned loose with a catalog and a collection of photos** plus the usual platitudes, but they are educated. Sales meetings are held weekly. These are attended by the old experienced and the newer men. These meetings may be termed A, B, C courses, for they include written examinations which deal with chassis construction, body types, transportation, parts, service, etc. Prizes are offered to provide an incentive and one of the recent awards was a valuable gold watch. In addition, the salesmen are sent to the factory school where they spend two weeks, during which time they are compensated. Between the dealer sales meetings and factory course the salesmen are afforded an opportunity to learn mechanical construction, service and selling. The salesmen are thoroughly grounded in the service policies of the company and

JANUARY 15, 1915

THE COMMERCIAL CAR JOURNAL

91



ALLEN BAKER
Pres. & Gen. Mgr.
Federal Truck Company of St. Louis
Federal Distributors

—Another

FEDERAL

Endorsement

FEDERAL TRUCK COMPANY

1218 CHESTNUT STREET
ST. LOUIS, MO. Oct. 17th 1914.

Federal Motor Truck Co.,
Detroit, Mich.
Gentlemen:

"We are proud to say that we have not one dissatisfied owner." Just think what that sentence means to a dealer in motor trucks. It is the best kind of an endorsement of the Federal, the service that it gives and the service rendered by the Federal Organization.

If you were selling Federalized Transportation you could say the same thing — Federal Dealers all over the world realize that they are selling more than Federal Trucks—they are selling efficient, economical and thoroughly dependable transportation service.

The Federal Company is one of the strongest in the motor truck industry, financially and in quality as well as quantity of production.

If there is any possibility of your going into the business, taking on a truck or changing your line—you owe it to yourself as well as your customers to investigate the Federal.

**FEDERAL
MOTOR TRUCK
COMPANY**

112-120 LEAVITT STREET
DETROIT, MICHIGAN

When Writing, Please Say—"Saw Your Ad. in the C C J"

Our connection with the Federal Motor Truck Co. has certainly been a pleasure and a profit, in their treatment of this company as well as their treatment of Federal owners. The trucks have done the rest.

We still have trucks #6, 9 & 13 running. These were some of the first Federals manufactured and have been in active service for five years. They are still running in good shape; doing their daily work, and are in almost as good condition and secure their owners as little expense as the new models. We are proud to say that we have not one dissatisfied owner.

Yours very truly,
Federal Truck Co. of St. Louis

By *Allen Baker*

The Advertisement Which Appeared in 1915 and Which Induced Mr. Ludlum to Enter the Motor Truck Business

merchandise it, employing that sales clincher, "Ask the satisfied owner." Prospects are invited to the service station and shown the immense stock of parts and facilities for servicing.

Practical Trade-in Policy

This dealer is not loaded up with a lot of old trucks, for he has a very simple policy which is, after all, the solution of the trade-in evil. It is NOT TO ALLOW MORE THAN THE MARKET VALUE FOR THE TRUCK TAKEN IN PART PAYMENT. "Buy right and sell right" is the rule. If the old truck can't be bought right the sale goes to some other dealer who has not learned that exchanging good dollars for junk hastens the day of his downfall. This coupled with a fixed limit on the number of trade-ins and a used truck sales contest is the answer.

Every truck salesman prefers to sell a new chassis—but with this dealer they must sell the old ones, for a trade-in will not be accepted until the old ones are disposed of, i. e., after the limit has been reached. To stimulate selling of the used trucks, sales contests are arranged and changed monthly. That for April, for moving the used and rebuilt trucks, consisted of offering two prizes, first of \$100 and second \$50 in addition to the commissions. To be eligible to the first prize the salesman is obliged to sell three or more used trucks and the total net amount in dollars must exceed \$4000. Two or more used trucks must be sold



The Paterson Branch Where Sales and Service Policies Are Identical With Those at Newark

and the total net in dollars must exceed \$2000 to win the second prize. These sales contests have been very successful and the writer was informed that the used stock in hand late in the winter was sold at a profit averaging \$100 above that estimated and including the carrying charges.

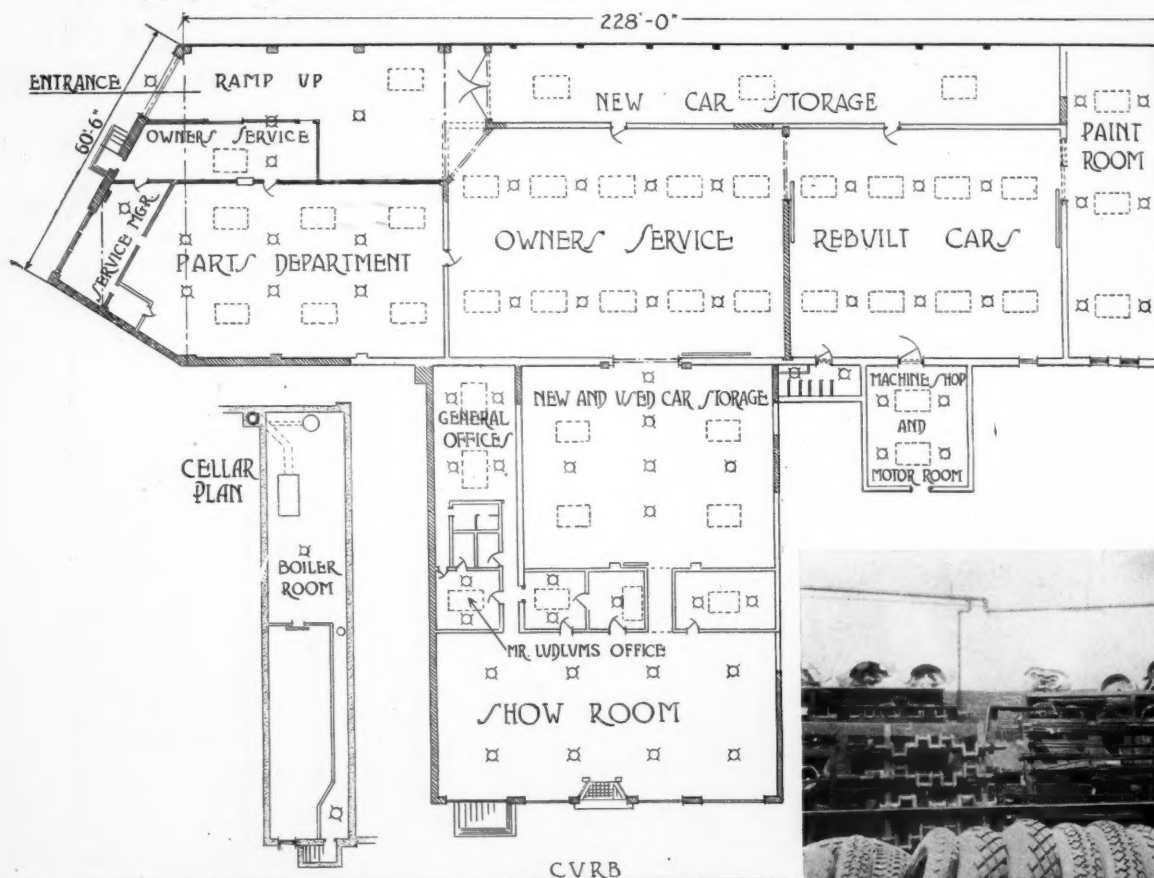
Trade-ins of the make carried are rebuilt and sold with a guarantee. A feature of the rebuilt department is that each job is completely repainted. The paint department employs five men and the work of this department is thoroughly merchandised. There is also a washing

department where trucks are cleaned for a nominal sum, for this dealer believes in the sales psychology of neat appearing trucks. Greater effort is to be made in educating owners to keep their trucks clean and painted.

How Prospects Are Divided

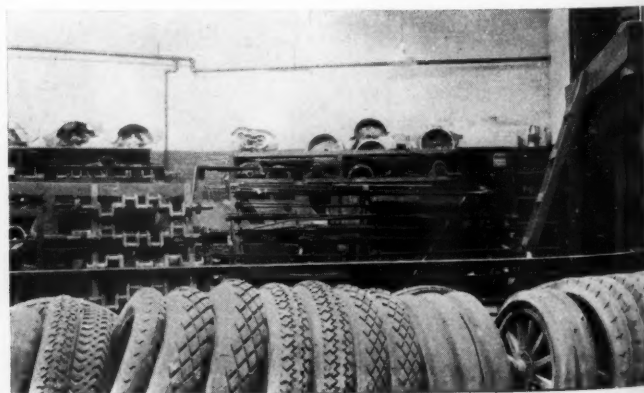
The division of prospects requires tact, for the average salesman believes the other salesman always has the cream. A large number of prospects are attracted to the show room by consistent newspaper and other forms of advertising. The show room prospects are handled

by the dealer himself and those not closed at the time of the call are divided equally among the salesmen. Credit, commissions, of the show room sales are also divided among the salesmen. In other words, if the dealer makes the sale, a salesman receives his compensation the same as he would had he made the sale. A considerable amount of money thus goes



Illustrating the Remodeling and Additions Which Resulted in a Practical Service Station, Show Room and General Offices for the Ludlum Motor Car Company, Newark, N. J.

Among the features are fireproof construction, large skylights, parts department, shower baths, attractive show room and segregation of service entrance.



A Corner of the Parts Room Which is Unusually Large and Well Lighted, Showing Crankshafts, Etc., Racked

to the sales force and notwithstanding that some dealers argue that the sales force is not entitled to credit, it has certain advantages. Plans are being consummated whereby a zoning system for salesmen will be adopted.

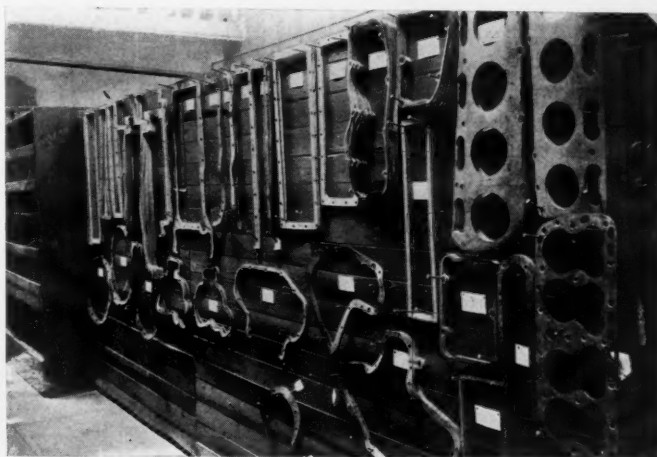
The Sub-Dealer Problem

This dealer who has built and is building sales on satisfactory service, does not favor the usual sub or associate dealer plan where the territory is such that the dealer, or his branch, can service and sell. He argues that while it is practical to obtain a representative, and he may sell a few trucks a year, he will not stock parts and give satisfactory service. Associate dealers have been tried by this dealer with the result, he states, that development of sales has been retarded because the sub-dealer had no interest other than a sales interest. Furthermore, these dealers were selling trucks, not transportation. Because of a lack of satisfactory service, sales resistance was built which required time and money to counteract.

A better method is that utilized by this dealer who has a large parts stock and a well equipped service station in the city and another in the center of the outlying

Trucks are driven in up a ramp, the new ones to a department set aside for them and those requiring attention into the main service room. Owners desiring parts are served at a window near the manager's office, and an interesting feature of the window is that one can see the greater part of the parts room and cannot but be impressed by the large stock, the method of arranging same and the neatness of the department. Bins, special racks, etc., convey an impression of efficiency and system. Another feature is that every department is provided with hot and cold water, shower baths, etc. This dealer believes that the mechanics and other service station employees appreciate a shower bath after a hard day's work, particularly in warm weather. The sanitary arrangements are excellent.

Below: Another Section of the Parts Room, Showing Inverted V-Racks for Springs, Axle Shafts, Drag Links, Etc.



Above: A Simple Method of Stocking Gaskets and Maintaining Their Alignment.



territory, so that with the extreme district about 40 miles distant it is possible with two sales and service stations to exploit and service the territory. The sales and service, sales resistance was built which proper service station equipment the cost to the owner is considerably less than when serviced by the small repair shop.

This brings up the subject of service. An accompanying diagram shows the arrangement of the various departments of the building which was remodelled and additions constructed. It is interesting to note that an unusual amount of space has been given over to the parts department and that it is well lighted by six large skylights; in fact, all departmental rooms, offices, show room, etc., have skylights. The lighting is one of the best the writer has seen for many a day. Indirect lighting is employed at night.

Display the Parts Stock

As may be noted, the entrance to the service station is on another street and separate from the show room which is an excellent plan. The service manager is provided with good quarters and so located that he is easily accessible to the owner upon entering the service station.

Unusual Show Room

The show or sales room is unusually large and attractive and would do credit to a passenger car dealer. The floor is smooth cement, painted a maroon, with ceilings and walls in cream. A ramp leads from the room to the new and used car department, and the dealer's offices have pivoted windows so that an unobstructed view is obtained of the show room and the entrance. Much could be said in detail of the building plan, but a study of it will reveal features not described.

At the time of the writer's visit a rearrangement of the service station was in progress. That section marked machine and motor room is to be given over to machine work only. Over \$12,000 worth of new machinery, time and labor saving equipment has been purchased and will be installed.

In talking with this dealer the writer was impressed by his stand on service. This dealer realizes that maintenance costs must come down, that the present and future buyer, new or old, will be more interested in what it will cost him to maintain his trucks than in design or units. This dealer also knows that costs can be considerably reduced by the

utilization of special machines which will cut labor charges in two, if not better, for after all it is the labor item that is the cause of dispute. The service manager of this dealer was at the factory studying construction from the frame up when the writer called. This service head, when he returns, will be expected to conduct his department on a better paying basis than he has in the past, and at the same time seek to reduce costs to the owners. He will have the co-operation of his employer when time and labor saving machines, tools and equipment appear on the market, for new will be added despite the recent heavy investment.

Predicts Best Year Yet

The fact that a large sum has been spent and more money will be for im-

proving service, and reducing its cost, indicates two facts. One is that here is one live wire dealer who is looking into the future and sees what real service means to his business. The other is that he has confidence in the future. When asked what he thought of the outlook for truck sales in 1922 this dealer said it "would be the best year since he has been in business", and remember he led the country for two years in gross sales. I believe I am correct when I state that there is but one other dealer in the same city as this dealer, who is now handling the same make of truck as when he started. There have been many changes that have taken place, but these two remain and have prospered. Why? Because first of all they are business men and built on satisfied customers. One started with practically nothing and now has much and will have more.

His name? It is G. H. Ludlum, head of the Ludlum Motor Car Co., Newark, N. J., and he is the young man who read that advertisement about the Federal trucks and western dealer in the COMMERCIAL CAR JOURNAL seven years ago. He has a branch store at Paterson, N. J., and has Essex, Union, Middlesex, Passaic, Monmouth counties and a part of Bergen. If you are ever in the vicinity of Newark drop in and call on him. You will be assured of a hearty welcome and will be well paid for your time and, perhaps, may discover why Federal trucks are being sold so that they remain sold.

Service Station and Repair Shop Appliances

Ransome Parallel Extension Reamer

The parallel extension reamer now marketed by H. A. Hopkins & Co., Inc., 301 Laporte Ave., South Bend, Ind., is made up of three main units, namely: body, nut and blades.

It is constructed so that a rope may be attached to the top and run over pulleys with a counterweight at the other end to insure ease of operation and allow the reamer to be fed the desired speed.

The rope, pulley and swivel are furnished with reamer, but the counterweight is not, as any old piece of iron or scrap material of weight equivalent to the reamer will serve the purpose.

Through a protected process the blades of this reamer are anchored by flanges that run in the grooves, making them steady, free from chatter and enabling them to present an even cutting edge.

Each reamer has a 1-16-in. expansion to allow for regrinding.

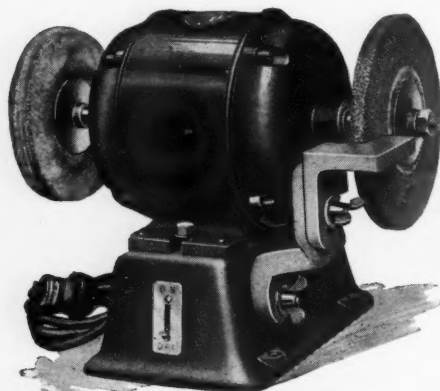


View of the Ransome Extension Reamer.

Marathon OK Electric Grinder

The Marathon Electric Mfg. Co., 34 Island St., Wausau, Wis., is offering to the trade a grinder and buffer that is stated to be ideally adapted for grinding tools, preparing metal surfaces for welding, and other similar uses.

Its special features are the positive and sturdy "off and on" switch located in the



Marathon OK Grinder and Buffer

base, and the safety and convenience of the control lever, which is easily lifted into running position with the finger and shut off in an instant with a quick downward drive of the hand.

The grinder is 6 x 1/2 in., No. 60 Norton abrasive wheel, and the buff is a standard 6 x 3/8 in. Hanson Van Winkle cotton buff, unsewed. A special wire brush wheel for use on inner tubes is extra.

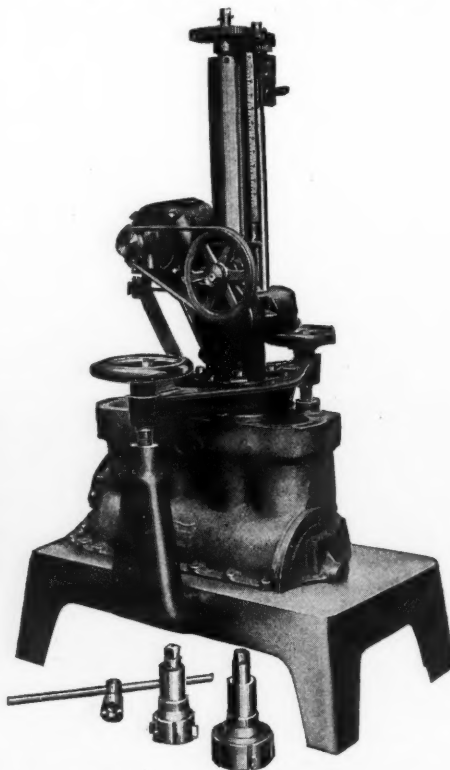
The retail price is \$25. This outfit can also be furnished in 2- and 3-phase, but without switch in base. This outfit also retails for \$25.

Storm Type M Machine

The Storm Mfg. Co., 4th St. and 6th Ave., Minneapolis, Minn., states that its Type M reborer machine is designed to meet the requirements of the average garage. It is of heavy build and rigid construction.

The multiple cutter heads are supported by a rigid, hardened steel bar, which is ground to exact size. Extra long bearings adjustable to take up wear are used. Cutter gears are used throughout and a heavy internal feed screw and gears control the feed bar. Total capacity is 25/8 to 6 in., sufficient to take care of practically all sizes in common use.

The machine can be had either with motor drive, belt drive or drill press drive. When desired the machine may be detached from its base and mounted directly upon a cylinder block in chassis. Weight, approximately 300 pounds.

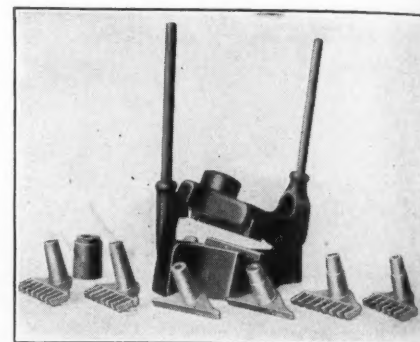


Storm Reborer Preparatory to Operation

Washburn Post-Strap Mould

Made from high-grade iron and carefully machined to insure the producing of best lead castings, the Post Mould offered by the Washburn Burner Corp., Kokomo, Ind., is pointed out as being an essential item of equipment that should be included in the equipment of every service station engaging in extensive battery repair work.

A movable tooth rack enables the operator to cast odd and even number teeth on the post strap to receive either posi-



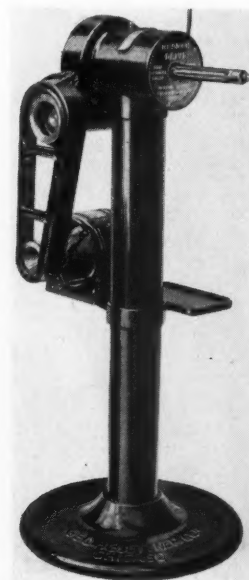
Washburn Post-Strap Mould

tive or negative plates, correctly spaced for all standard batteries. By reversing the end, blanks can be cast. Castings are easily removable.

Two bushings are furnished, and these are bored and reamed to standard post sizes, fitting standard rubber covers commonly used by all repair shops.

Blettner Reamer Drive

The George H. Blettner Co., 1401-05 W. Jackson Blvd., Chicago, Ill., is offering a sturdy well-built machine for expediting



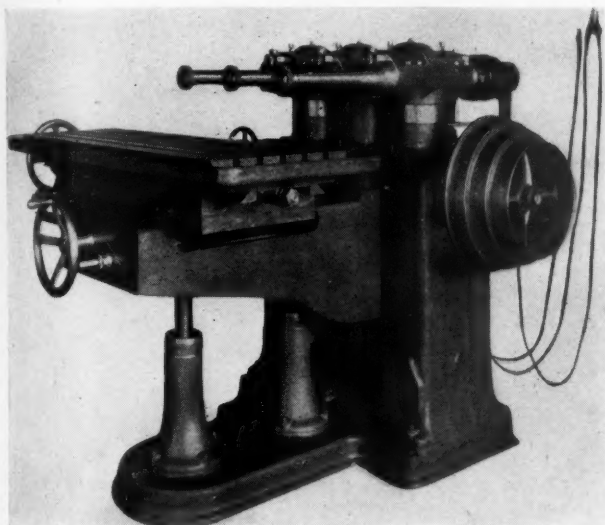
Machine for Sizing Holes

the reaming of finished holes where sizing is essential. It is claimed to produce a smooth, well-finished and accurate job. It propels hand, expansion, adjustable or special reamers, and is operated by a small electric motor, 1-6 hp., A. C. or D. C., 32 110 or 220 volt, which may be connected to any lighting circuit. All parts are well constructed, readily accessible and enclosed to retain oil for lubrication.

Kosmos Three-Spindle Grinder

A grinder said to be adaptable to the rapid and accurate grinding of any make engine cylinder is being offered by the Illinois Cylinder Grinding Machine Co., 1905-09 West Division St., Chicago, Ill. One of its most prominent features is the fact that three cylinders can be ground simultaneously, which is particularly advantageous in the grinding of six-cylinder engines.

It is stated that the spindle, being driven by an electric motor, makes it free from all vibration, a condition which is



Right: This Equipment Includes Everything Necessary to Drive Any Standard Generator

Left: Showing the Kosmos Three-Spindle Grinder. Its Chief Feature is the Absence of Vibration.

all-important in the production of a smooth, mirror-like finish.

This company also produces two and one-spindle machines. The one-spindle machine can be converted into a double spindle grinder by the addition of another head if an increased volume of work demands it.

Prices: Three spindle, \$3500; two spindle, \$2750, and single spindle, \$2100, including water pump. Other attachments are furnished on request. They include blower, \$100; boring attachment, \$150; jig, \$75; additional head for a single spindle machine, \$650.

Simplicity Reborer and Grinder

The Simplicity Engine & Mfg. Co., Port Washington, Wis., is offering a portable reborer and grinder fully equipped that will rebore and regrind cylinders ranging in size from $2\frac{3}{4}$ to $3\frac{7}{8}$ in. It is operated by its own motor and is $2\frac{1}{2}$ ft. high and weighs 150 lb.

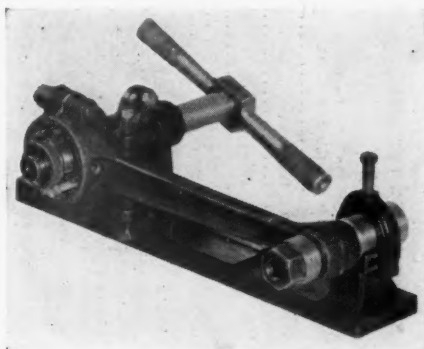


Simplicity Reborer and Grinder for Cylinders Ranging in Size From $2\frac{3}{4}$ in. to $3\frac{7}{8}$

Universal Connecting Rod Reamer

The Moore Engineering Co., Hagerstown, Md., recently announced a connecting rod reamer known as the Universal. It is sturdy in construction and simple in design.

The accompanying illustration shows a connecting rod in position and ready to



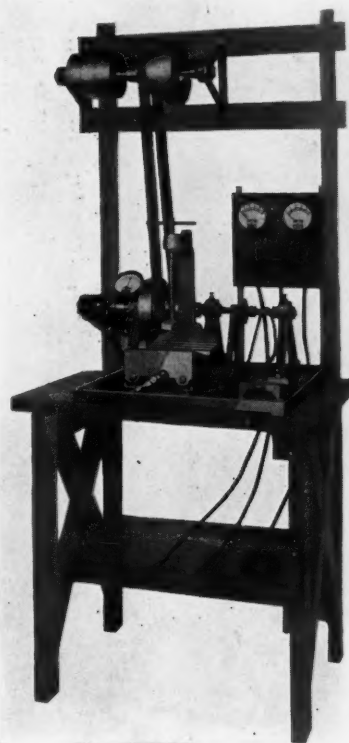
View of Connecting Rod Mounted for Reaming

be reamed by this tool. It shows the rod being aligned, and it can be noted that both the wrist pin and bearing are exactly parallel, there being no need for twisting or bending of the connecting rod to force a good fit.

Add-A-Unit Test Fixture

The Add-A-Unit Test Fixture offered by Joseph Weidenhoff, Chicago, Ill., is stated not only to be of low price, but to include everything necessary to successfully drive any standard generator or ignition device. All of the units, of which this fixture is composed, are interchangeable. New units may be added from time to time without machine work.

Power is given the countershaft of the test fixture either from a line shaft or from a motor. The countershaft is provided with three pulleys and a 4 step cone pulley. Of the three pulleys, the one in



the center is the tight or driving pulley, those on either side being loose pulleys.

The arrangement of countershaft and jackshaft makes possible the efficient driving of generators, which is with a silent chain. Simplicity and efficiency of operation have been carried still further in the use of the Fittsall driving chuck. This is a combination 3 jaw chuck and driving gear which mounts on the generator shaft and by which means, the generator, when held in the Holdtite test vise, is rotated by the silent chain.

On the jackshaft is also mounted a grooved pulley for driving magnetos when held in the magneto holding bracket, located on the bed plate to the right of the Holdtite test vise. A round, leather belt and a taper bored pulley for mounting on the magneto shaft provide everything required for driving magnetos.

Price List of Truck Pneumatic Tire Casings, With Capacities and Inflation Pressures of Larger Sizes

THE COMMERCIAL CAR JOURNAL																		MAY 15, 1922		
Company	30 x 6				38 x 7				40 x 8				42 x 9				44 x 10			
	30	32	34	36	32	34	36	38	34	36	38	40	36	38	40	42	44			
Achilles Rubber & Tire Co., Birmingham, N. Y.	36.00	32.00	34.00	36.00	32.00	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	44.00			
Achilles Cord, non-skid	36.00	32.00	34.00	36.00	32.00	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	44.00			
Acme Rubber Mfg. Co., Trenton, N. J.	18.00	32.00	34.00	36.00	32.00	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	44.00			
Acme Cord, non-skid	18.00	32.00	34.00	36.00	32.00	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	44.00			
Ajax Rubber Co., Inc., New York, N. Y.	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Ajax Cord, non-skid	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Amazon Rubber Co., Akron, O.	18.00	34.40	36.55	38.70	34.40	36.55	38.70	40.00	36.55	38.70	40.00	42.00	38.70	40.00	42.00	44.00	46.00			
Amazon Cord, non-skid	18.00	34.40	36.55	38.70	34.40	36.55	38.70	40.00	36.55	38.70	40.00	42.00	38.70	40.00	42.00	44.00	46.00			
American Rubber & Tire Co., Akron, O.	20.50	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	38.00	40.00	42.00	44.00	46.00			
American Cord, non-skid	20.50	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	38.00	40.00	42.00	44.00	46.00			
Armstrong Rubber Co., Inc., Garfield, N. J.	18.90	34.00	36.00	38.00	34.00	36.00	38.00	40.00	36.00	38.00	40.00	42.00	38.00	40.00	42.00	44.00	46.00			
Armstrong Super Size Cord, non-skid	12.90	23.50	25.50	27.50	23.50	25.50	27.50	29.50	25.50	27.50	29.50	31.50	27.50	29.50	31.50	33.50	35.50			
Badger Rubber Works, Milwaukee, Wis.	19.25	31.50	33.50	35.50	31.50	33.50	35.50	37.50	33.50	35.50	37.50	39.50	35.50	37.50	39.50	41.50	43.50			
Badger Cord, non-skid	19.25	31.50	33.50	35.50	31.50	33.50	35.50	37.50	33.50	35.50	37.50	39.50	35.50	37.50	39.50	41.50	43.50			
Beacon Tire Co., Inc., Beacon, N. Y.	18.60	32.65	34.65	36.65	32.65	34.65	36.65	38.65	34.65	36.65	38.65	40.65	36.65	38.65	40.65	42.65	44.65			
Beacon Rib Skid Cord (Red Seal)	18.60	32.65	34.65	36.65	32.65	34.65	36.65	38.65	34.65	36.65	38.65	40.65	36.65	38.65	40.65	42.65	44.65			
Blekre Tire & Rubber Co., St. Paul, Minn.	18.00	32.40	34.40	36.40	32.40	34.40	36.40	38.40	34.40	36.40	38.40	40.40	36.40	38.40	40.40	42.40	44.40			
Blekre Cord, non-skid	18.00	32.40	34.40	36.40	32.40	34.40	36.40	38.40	34.40	36.40	38.40	40.40	36.40	38.40	40.40	42.40	44.40			
Braender Rubber & Tire Co., Rutherford, N. J.	18.00	32.40	34.40	36.40	32.40	34.40	36.40	38.40	34.40	36.40	38.40	40.40	36.40	38.40	40.40	42.40	44.40			
Braender Bull-Dog Super, non-skid	18.00	32.40	34.40	36.40	32.40	34.40	36.40	38.40	34.40	36.40	38.40	40.40	36.40	38.40	40.40	42.40	44.40			
Brunswick-Balke-Collender Co., Chicago, Ill.	18.50	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	36.50	38.50	40.50	42.50	44.50			
Brunswick Cord, non-skid	18.50	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	36.50	38.50	40.50	42.50	44.50			
Burdick Tire & Rubber Co., Noblesville, Ind.	39.50	58.75	62.25	65.75	58.75	62.25	65.75	69.25	62.25	65.75	69.25	72.75	65.75	69.25	72.75	76.25	79.75			
Air Bag Cord, non-skid	39.50	58.75	62.25	65.75	58.75	62.25	65.75	69.25	62.25	65.75	69.25	72.75	65.75	69.25	72.75	76.25	79.75			
Canton-Blackstone Co., Youngstown, O.	20.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Canton Cord, non-skid	20.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Combination Rubber Mfg. Co., Bloomfield, N. J.	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Combination Viking Cord, non-skid	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Dayton Rubber Mfg. Co., Dayton, Ohio	18.95	32.75	34.95	37.15	32.75	34.95	37.15	39.35	34.95	37.15	39.35	41.55	37.15	39.35	41.55	43.75	45.95			
Dayton Cord, non-skid	18.95	32.75	34.95	37.15	32.75	34.95	37.15	39.35	34.95	37.15	39.35	41.55	37.15	39.35	41.55	43.75	45.95			
Empire Tire & Rubber Co., Trenton, N. J.	19.50	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Empire Cord, non-skid	19.50	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Erie Tire & Rubber Co., Sandusky, O.	19.60	37.05	39.15	41.25	37.05	39.15	41.25	43.35	39.15	41.25	43.35	45.45	41.25	43.35	45.45	47.55	49.65			
Erie Cord, non-skid	19.60	37.05	39.15	41.25	37.05	39.15	41.25	43.35	39.15	41.25	43.35	45.45	41.25	43.35	45.45	47.55	49.65			
Excel Rubber Co., Wadsworth, Ohio	24.50	46.30	48.95	51.60	46.30	48.95	51.60	54.25	48.95	51.60	54.25	56.90	51.60	54.25	56.90	59.55	62.20			
Flint Cord, non-skid	24.50	46.30	48.95	51.60	46.30	48.95	51.60	54.25	48.95	51.60	54.25	56.90	51.60	54.25	56.90	59.55	62.20			
Falls Rubber Co., Cuyahoga Falls, O.	19.50	34.00	36.50	39.00	34.00	36.50	39.00	41.50	36.50	39.00	41.50	44.00	39.00	41.50	44.00	46.50	49.00			
Falls Cord, non-skid	19.50	34.00	36.50	39.00	34.00	36.50	39.00	41.50	36.50	39.00	41.50	44.00	39.00	41.50	44.00	46.50	49.00			
Federal Rubber Co. of Illinois, Cudahy, Wis.	17.50	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Federal Cord	17.50	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Firestone Tire & Rubber Co., Akron, O.	17.50	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Firestone Cord, non-skid	17.50	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Fisk Tire Co., Inc., Chillicothe Falls, Mass.	17.85	30.50	32.50	34.50	30.50	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	42.50			
Fisk Cord, non-skid	17.85	30.50	32.50	34.50	30.50	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	42.50			
Fisk Flat Tread Cord	17.85	30.50	32.50	34.50	30.50	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	42.50			
Gates Rubber Co., Denver, Colo.	18.95	32.85	34.90	36.95	32.85	34.90	36.95	39.00	34.90	36.95	39.00	41.05	36.95	39.00	41.05	43.10	45.15			
Gates Cord, non-skid	18.95	32.85	34.90	36.95	32.85	34.90	36.95	39.00	34.90	36.95	39.00	41.05	36.95	39.00	41.05	43.10	45.15			
General Tire & Rubber Co., Akron, O.	19.70	34.95	37.85	40.75	34.95	37.85	40.75	43.65	37.85	40.75	43.65	46.55	40.75	43.65	46.55	49.45	52.35			
General Cord, non-skid	19.70	34.95	37.85	40.75	34.95	37.85	40.75	43.65	37.85	40.75	43.65	46.55	40.75	43.65	46.55	49.45	52.35			
Gillette Rubber Co., Eau Claire, Wis.	19.25	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	36.50	38.50	40.50	42.50	44.50			
Gillette Cord, non-skid	19.25	32.50	34.50	36.50	32.50	34.50	36.50	38.50	34.50	36.50	38.50	40.50	36.50	38.50	40.50	42.50	44.50			
Goodrich, B. F., Rubber Co., Akron, O.	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Goodrich De Luxe Cord	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Goodrich Silvertown Cord	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Goodyear Tire & Rubber Co., Akron, O.	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Goodyear Cord All-Weather Tread	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Goodyear Rut-Proof	18.00	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Hewitt Rubber Co., Buffalo, N. Y.	18.75	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Hewitt Cord, non-skid	18.75	32.40	34.25	36.10	32.40	34.25	36.10	38.00	34.25	36.10	38.00	40.00	36.10	38.00	40.00	42.00	44.00			
Hood Rubber Prod. Co., Watertown, Mass.	18.95	32.45	35.40	38.35	32.45	35.40	38.35	41.30	35.40	38.35	41.30	44.25	38.35	41.30	44.25	47.20	50.15			
Hood Cord, non-skid	18.95	32.45	35.40	38.35	32.45	35.40	38.35	41.30	35.40	38.35	41.30	44.25	38.35	41.30	44.25	47.20	50.15			

[illegible]

Activities of the Motor Truck Association of Philadelphia

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THE COMMERCIAL CAR JOURNAL OFFICIAL ORGAN

BELIEVING that the interests of motor truck owners and the motor truck industry can be better conserved by having a representative of the industry in the Pennsylvania State Legislature, the Motor Truck Association of Philadelphia at their monthly meeting unanimously endorsed the candidacy of W. H. Metcalf secretary of the Association, for election in the Upper Darby district of Delaware County.

Mr. Metcalf has probably been more closely identified with motor truck and motor car legislation than any man in the State, having been secretary of the Truck Association since its organization about seven years ago. He has made an exhaustive study of the motor laws of all States and has been largely instrumental in securing the adoption and modification of laws affecting motor truck transportation. The Motor Truck Association has no intention of entering into politics in general, but merely believes a well-posted man in the legislature would be of assistance to his fellow legislators and the State authorities.

Thomas K. Quirk, president of the Association, in presenting Mr. Metcalf's name, stated that the motor truck owners and the industry had been sadly lacking in the legislative halls of this and other States through the absence of men posted on the necessary requirements. He said that the State authorities were glad to co-operate with the motor truck men, provided they were properly advised, and that he believed that if Mr. Metcalf is elected he will be enthusiastically welcomed at the State capitol.

An address on proper motor truck lighting and legislation was made by Oscar F. Ostby, of the Prest-O-Lite Co., New York. Mr. Ostby said that proper road lighting and signal lights on trucks and passenger cars was a very important subject and paid the Philadelphia Truck Association a compliment for its activity in securing the first fair headlight laws in this State which had formed a pattern for other States. He said that there is now being considered a law by a number of Eastern States which will be fair to

the owner, the manufacturer and the public, being uniform in character, and it is hoped it will be adopted by all States in the country. He pointed out that the expansion of motor truck hauling, particularly in rural districts, was making the lighting problem more essential than ever.

"It has long been apparent that proper lighting regulations by law are necessary," said Mr. Ostby. "Such laws should conform to the concerted opinion of organizations like yours, which should be represented within the State legislature so that you may have a voice in the framing of those laws. What you do here will be followed elsewhere."

An interesting talk on selling of motor trucks was given by Arthur W. Osborn, sales manager for the White Company, Philadelphia. He reviewed the history of transportation from the days when man was practically a beast of burden to the present time, and stated that transportation along with food and shelter was one of the three elementary necessities for man.

Republic Enters Railway Field With Big Order

THE rapid development of the motor bus for supplementary and feeder service for existing railway lines has been manifested almost to the extent of an arithmetrical progression these last few months. The motor bus, through its inherent utility, is gradually establishing itself in the estimation of railroad executives as an important cost reducing factor not to be neglected in efficient railway operation. In fact, the day is not far distant when the motor bus will be universally accepted by the railroads of the country as an indispensable unit in their operating systems.

Of particular interest at this time is an order just placed with the Republic Truck

Sales Corp., Alma, Mich., by the Baltimore Transit Co., a subsidiary of the United States Railways and Electric Co., for twenty-six Republic Knight-Motored buses. This company was recently required to expand its service, and also replace a number of its old models, some of which have been in operation as long as five years. The order was the result of a test covering a period of five months in which one of these buses was subjected to service that would be exacted from it in actual operation over a regular route. The efficiency made apparent by this operating test convinced the company of the economy of such bus equipment.

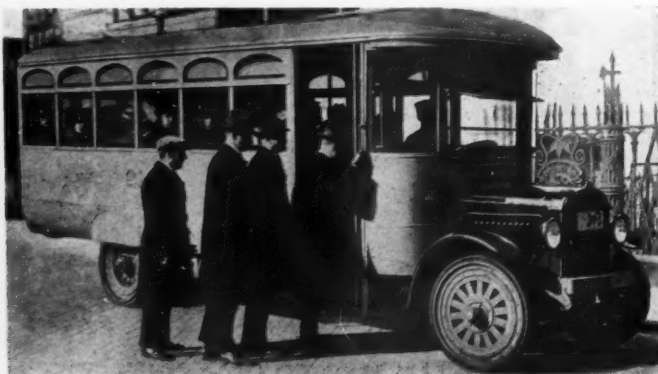
The sale of these buses is the outgrowth of activities initiated about one year ago, when the Republic Truck Sales Corp. became convinced of the latent possibilities of the motor bus for supplementary and feeder service to existing railways.

A Public Utilities Division was created as part of the Republic organization, under the direction of Ralph M. Sparks, a passenger transportation expert of broad experience in the traction field. After extended study, which covered the principal cities of the United States and Canada, where buses were operated, Republic engineers designed a motor bus, based on the results of the investigation, which left them convinced that the ordinary truck chassis was not suitable for passenger transportation.

The Republic Knight-Motored bus commensurates all recognized essentials of successful passenger car service. These essentials include a body built low to the ground to facilitate entrance and egress of passengers, ample aisle space and headroom, dependable service, comfort of passengers, and pleasing appearance.

To these important essentials is added complete absence of noise and vibration, through the use of the celebrated Knight sleeve valve engine.

The Public Utilities Division of the Republic Truck Sales Corp. has been in consultation with a number of the largest railway companies in the East, and satisfactory progress has been made in helping solve the peculiar problems incident to establishing profitable motor bus service as a supplement to their existing line.



One of the New Republic Knight-Motored Buses Recently Taken Over by the Baltimore Transit Co. in Expanding Its Service and Replacing Old Equipment.

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line

Fan Belt Type: V—V-Shape, F—Flat, R—Round

Name, Model and Tonnage	ENGINE										BRAKE LINING				FRAME							
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service		Emergency		Length	Width						
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Acson R-1—1920.....	4	1 1/4	1 1/4	1 1/4	1 1/4	10 1/2	2 1/4	6 1/2	2	37 1/2	1	F	11 1/2	3	1 1/4	2	11 1/2	3	1 1/4	2	112	34
Acson RB-1 1/2—1920.....	4	1 1/4	1 1/4	1 1/4	1 1/4	10 1/2	2 1/4	6 1/2	2	37 1/2	1	F	11 1/2	3 1/2	1 1/4	2	11 1/2	3 1/2	1 1/4	2	112	34
Acson H-2 1/2—1920.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	13 1/2	3 1/2	1 1/4	2	13 1/2	3 1/2	1 1/4	2	130	35
Acson L-3 1/2—1920.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	16	3 1/2	1 1/4	2	16	3 1/2	1 1/4	2	163 1/2	35
Acson M-5—1920.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	18	4 1/2	1 1/4	2	18	4 1/2	1 1/4	2	167 1/2	35
Ac. Series A 1 1/2—1920.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	12	3 1/2	1 1/4	4	12	3 1/2	1 1/4	4	122 1/2	32
Ac. Series A2 1/2—1919-20.....	4	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	13	3 1/2	1 1/4	4	13	3 1/2	1 1/4	4	144 1/2	32
Ame 20-1.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	10 1/2	2 1/2	1 1/4	4	10 1/2	2 1/2	1 1/4	4	110 1/2	34
Ame 30-1 1/2.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	38 1/2	1 1/4	F	12	3 1/2	1 1/4	4	12	3 1/2	1 1/4	4	110 1/2	34
Ame 40-2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11 1/2	1 1/2	40	1 1/4	F	12	3 1/2	1 1/4	4	12	3 1/2	1 1/4	4	123 1/2	34
Ame 60-3.....	4	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11 1/2	1 1/2	40	1 1/4	F	13	3 1/2	1 1/4	4	13	3 1/2	1 1/4	4	132 1/2	34
Ame 60L-3.....	4	1 1/4	1 1/4	1 1/4	1 1/4	10	1 1/2	13	1 1/2	33 1/2	1 1/4	F	13	3 1/2	1 1/4	4	13	3 1/2	1 1/4	4	140 1/2	34
Ame 90-4 1/2.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11 1/2	2 1/2	13	1 1/2	33 1/2	1 1/4	F	15 1/2	3 1/2	1 1/4	4	15 1/2	3 1/2	1 1/4	4	150 1/2	36
Ame 125-6 1/2.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11 1/2	2	40 1/2	2	F	18	4	1 1/4	4	18	4	1 1/4	4	159 1/2	37
American 25-2 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	19	1 1/2	17	1 1/2	38	2	F	19	2 1/2	1 1/4	4	19	2 1/2	1 1/4	4	142	33
American 40-4.....	4	1 1/4	1 1/4	1 1/4	1 1/4	19	1 1/2	17 1/2	1 1/2	38	2	F	57	2 1/2	1 1/4	4	19 1/2	2 1/2	1 1/4	4	142	37
American 50-5.....	4	1 1/4	1 1/4	1 1/4	1 1/4	19	1 1/2	17 1/2	1 1/2	38	2	F									153	37
Apex C-1.....	3	1 1/4	1 1/4	1 1/4	1 1/4	12	2	12	2	36 1/2	1 1/4	F	42	2	1 1/4	2	41 1/2	2	1 1/4	2	102	35 1/2
Apex D-1 1/2.....	3	1 1/4	1 1/4	1 1/4	1 1/4	12	2	12	2	36 1/2	1 1/4	F	42	2	1 1/4	2	41 1/2	2	1 1/4	2	102	35 1/2
Apex E-2 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	12	2	32	1	F	54	2 1/2	1 1/4	2	53 1/2	2	1 1/4	2	128	31 1/2
Apex G.....	3	1 1/4	1 1/4	1 1/4	1 1/4	12	2	15 1/2	2	34 1/2	1 1/4	F	42	2	1 1/4	2	41 1/2	2	1 1/4	2	102	35 1/2
Armleder 20.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	16 1/2	1 1/2	31 1/2	2	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	104 1/2	32
Armleder 21-1 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	16 1/2	1 1/2	31 1/2	2	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	Opt	32
Armleder 40B-1 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	9 1/2	2	11 1/2	1 1/2	33 1/2	1 1/4	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	Opt	32
Armleder 40C-1 1/2.....	3	1 1/4	1 1/4	1 1/4	1 1/4	10	1 1/2	11 1/2	1 1/2	35	1 1/4	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	Opt	32
Armleder KW-3 1/2—1916-21.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	16 1/2	1 1/2	35 1/2	2	F	42	3	1 1/4	1	16 1/2	3 1/2	1 1/4	8	Opt	36
Armleder KWC-3 1/2.....	3	1 1/4	1 1/4	1 1/4	1 1/4	10	1 1/2	16 1/2	1 1/2	35 1/2	2	F	42	3	1 1/4	1	16 1/2	3 1/2	1 1/4	8	Opt	36
Armleder HWB-2 1/2—1916-21.....	4	1 1/4	1 1/4	1 1/4	1 1/4	9 1/2	2	11 1/2	1 1/2	33 1/2	2	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	Opt	32
Armleder HWC-2 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	10	1 1/2	11 1/2	1 1/2	35	1 1/4	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	Opt	32
Atco B-1 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	31 1/2	2	F	25 1/2	2 1/2	1 1/4	4	18	2 1/2	1 1/4	4	109 1/2	32
Atco B1-1 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	11	2	11	2	31 1/2	2	F	46	2 1/2	1 1/4	4	46	2 1/2	1 1/4	2	109 1/2	32
Atco A-2 1/2.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	11	2	33 1/2	1 1/4	F	25 1/2	2 1/2	1 1/4	4	18	2 1/2	1 1/4	4	124 1/2	33
Atlas 21-1.....	3	1 1/4	1 1/4	1 1/4	1 1/4	9	2 1/4	14 1/2	2 1/4	31 1/2	1	F	40	2 1/2	1 1/4	1	22 1/2	2 1/2	1 1/4	1	84 1/2	33 1/2
Atterbury 20R-1 1/2—1920.....	4	1 1/4	1 1/4	1 1/4	1 1/4	8 1/2	1 1/2	14	1 1/2	38 1/2	1 1/4	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	122 1/2	34
Atterbury 7CX-2 1/2—1919-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	5 1/4	1 1/2	6 1/4	1 1/2	30 1/2	1 1/4	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	133 1/2	34
Atterbury 7D-3 1/2—1917-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	8 1/2	1 1/2	6 1/4	1 1/2	30 1/2	1 1/4	F	15 1/2	3 1/2	1 1/4	4	15 1/2	3 1/2	1 1/4	4	145 1/2	37 1/2
Atterbury SE-5—1919-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	14	2	20 1/2	2	40	2	F	17 1/2	4	1 1/4	4	17 1/2	4	1 1/4	4	157 1/2	37 1/2
Autocar XXI-F-2—1915-20.....	4	1 1/4	1 1/4	1 1/4	1 1/4	3	1 1/4	4	1 1/4	48 1/2	1 1/4	F	16 1/2	2 1/2	1 1/4	4	13	2 1/2	1 1/4	4	91	34
Autocar XXI-G-2—1920.....	4	1 1/4	1 1/4	1 1/4	1 1/4	3	1 1/4	4	1 1/4	48 1/2	1 1/4	F	25 1/2	2 1/2	1 1/4	4	13	2 1/2	1 1/4	4	114	34
Autocar XXVI-Y-4—1920.....	3	1 1/4	1 1/4	1 1/4	1 1/4	3 1/2	1 1/2	3	1 1/2	48 1/2	1 1/4	F	25 1/2	2 1/2	1 1/4	4	25 1/2	2 1/2	1 1/4	4	121	34 1/2
Autocar XXVI-B-4—1920.....	3	1 1/4	1 1/4	1 1/4	1 1/4	3 1/2	1 1/2	3	1 1/2	48 1/2	1 1/4	F	25 1/2	2 1/2	1 1/4	4	25 1/2	2 1/2	1 1/4	4	176	34 1/2
Available H-1 1/2—1920.....	4	1 1/4	1 1/4	1 1/4	1 1/4	11	2	14	2	40	2	F	48	2 1/2	1 1/4	4	36	2 1/2	1 1/4	2	120	32
Available H-2 1/2—1916-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	14	2	40	2	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	144	32
Available H3—1916-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	11	2	14	2	40	2	F	16	3 1/2	1 1/4	4	16	3 1/2	1 1/4	4	168	36
Available H5—1916-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	12	2	16	2	40	2	F	18	4	1 1/4	4	18	4	1 1/4	4	168	38
Available H7—1919-20.....	3	1 1/4	1 1/4	1 1/4	1 1/4	12	2	16	2	40	2	F	72	3 1/2	1 1/4	4	72	3 1/2	1 1/4	2	168	38
Available H2—1921.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	14	2	40	2	F	48	2 1/2	1 1/4	4	36	2 1/2	1 1/4	2	120	32
Available H2 1/2—1921.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	14	2	40	2	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	144	32
Available H3 1/2—1921.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	14	2	40	2	F	16	3 1/2	1 1/4	4	16	3 1/2	1 1/4	4	168	36
Available H5—1921.....	4	1 1/4	1 1/4	1 1/4	1 1/4	12	2	16	2	40												

Replacement Table—Continued

Name, Model and Tonnage	ENGINE										BRAKE LINING							FRAME				
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency			Length	Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Clydesdale 18-3-1-1/4	3	1 1/2	1 1/2	1 1/2	V	15	2	12	2	41	3 3/4	V	11 1/4	2 1/4	1/4	4	11 1/4	2 1/4	1/4	4	95	34
Clydesdale 10-3-1-1/4	3	1 1/2	1 1/2	1 1/2	V	15	2	12	2	41	3 3/4	V	11 1/4	2 1/4	1/4	4	11 1/4	2 1/4	1/4	4	109	34
Collier 18 1-1919-20	3	1 1/2	1 1/2	1 1/2	V	9 3/4	2	10 1/2	1 1/4	40	1	V	24	3 1/4	1/4	4	24	3 1/4	1/4	4	106	34
Collier 19-1 1/2-1919-20	3	1 1/2	1 1/2	1 1/2	V	9 3/4	2	10 1/2	1 1/4	40	1	V	24	3 1/4	1/4	4	24	3 1/4	1/4	4	120	32
Collier 21-2-1918-20	3	1 1/2	1 1/2	1 1/2	V	6	1 1/2	10 1/2	1 1/4	40	1	V	27 1/2	3 1/4	1/4	4	27 1/2	3 1/4	1/4	4	132	32
Collier 22-2 1/2-1919-20	3	1 1/2	1 1/2	1 1/2	V	6	1 1/2	10 1/2	1 1/4	40	1	V	27 1/2	3 1/4	1/4	4	27 1/2	3 1/4	1/4	4	144	32
Columbia G-2 1/2-1921	3	1 1/2	1 1/2	1 1/2	V	11	1 1/4	10	1 1/4	38	1 1/4	F	55	3	1/4	2	50	2	1/4	2	132	32 1/2
Columbia H	3	1 1/2	1 1/2	1 1/2	V	12	2	11	1 1/4	38	1 1/4	F	42	2 1/2	1/4	2	40 1/2	1 1/4	1/4	2	120	32 1/2
Commerce T-1500	3	1 1/2	1 1/2	1 1/2	V	10	2	10	2	44	3 3/4	V	50	2 1/2	1/4	2	48 1/2	2	1/4	2	92 1/2	34
Commerce 12-3000	3	1 1/2	1 1/2	1 1/2	V	10	2	10	2	44	3 3/4	V	45	2 1/2	1/4	2	43	2	1/4	2	99 1/2	34
Commerce 16-4000	3	1 1/2	1 1/2	1 1/2	V	10	2	10	2	44	3 3/4	V	50 3/4	2 1/2	1/4	2	48	2 1/4	1/4	2	108 1/2	34
Commerce 18-5000	3	1 1/2	1 1/2	1 1/2	V	6	1 1/2	11	1 1/4	33	1 1/4	V	50 3/4	2 1/2	1/4	2	48	2 1/4	1/4	2	128 1/2	34
Concord A-2-1921	4	1 1/2	1 1/2	1 1/2	H	11	2 3/4	9 1/2	1 1/2	34	2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	108 1/2	32 1/2
Concord AX-2-1921	4	1 1/2	1 1/2	1 1/2	H	11	2 3/4	9 1/2	1 1/2	34	2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	4	122 1/2	32 1/2
Concord B-3-1921	4	1 1/2	1 1/2	1 1/2	H	11	2 3/4	9 1/2	1 1/2	34	2	F	13 1/2	3 1/4	1/4	4	13 1/2	3 1/4	1/4	4	122 1/2	32 1/2
Concord BX-3-1921	4	1 1/2	1 1/2	1 1/2	H	11	2 3/4	9 1/2	1 1/2	34	2	F	13 1/2	3 1/4	1/4	4	13 1/2	3 1/4	1/4	4	155 1/2	32 1/2
Corbitt E-1-1917-20	3	1 1/2	1 1/2	1 1/2	V	8	2	14	2	38	3/8	V	19	2	1/4	2	19	2	1/4	2	105	34
Corbitt D-1 1/2-1916-20	3	1 1/2	1 1/2	1 1/2	V	8	2	14	2	38	3/8	V	45 1/4	2 1/4	1/4	1	45 1/4	2 1/4	1/4	1	120	34
Corbitt C-2-1915-20	3	1 1/2	1 1/2	1 1/2	V	14	1 1/4	13	1 1/4	36	1 1/4	F	51 1/2	2 1/4	1/4	1	51 1/2	2 1/4	1/4	1	138	35
Corbitt B-2 1/2-1916-20	3	1 1/2	1 1/2	1 1/2	V	14	1 1/4	13	1 1/4	36	1 1/4	F	51 1/2	2 1/4	1/4	1	51 1/2	2 1/4	1/4	1	138	35
Corbitt AA-5-1919-20	3	1 1/2	1 1/2	1 1/2	V	13	1 1/4	8	1 1/4	36	2	V	69 1/4	3 1/4	1/4	1	69 1/4	3 1/4	1/4	1	160	38
Corbitt A-3 1/2-1917-20	3	1 1/2	1 1/2	1 1/2	V	13	2	14	2	36	1 1/4	V	64	2 1/4	1/4	1	64	2 1/4	1/4	1	160	35
Cyclone A-3000	3	1 1/2	1 1/2	1 1/2	V	16	2	16	2	32 1/2	1 1/4	F	21 1/4	1 1/4	1/4	4	19 3/4	1 1/4	1/4	4	113	34
Dart S-1 1/2-1920-21	3	1 1/2	1 1/2	1 1/2	H	11	2	8	1 3/4	36	1	F	19	1 1/4	1/4	2	19	1 1/4	1/4	2	112	34
Dart M-2 1/2-1920-21	4	1 1/2	1 1/2	1 1/2	H	11	2	14	1 1/4	35	2	F	10	2 1/4	1/4	2	19	3 1/4	1/4	4	124	34
Dart W-3 1/2-1920-21	4	1 1/2	1 1/2	1 1/2	H	11	2	12	1 1/2	36	2	F	28	2 3/4	1/4	2	28	2 3/4	1/4	2	144	38
Day-Elder AS-1	3	1 1/2	1 1/2	1 1/2	V	9	2	9 1/2	2	40	3/8	V	19	2	1/4	4	19	2	1/4	4	108	35
Day-Elder B-1 1/2	3	1 1/2	1 1/2	1 1/2	V	9	2	9 1/2	2	40	3/8	V	19	2	1/4	4	19	2	1/4	4	120	35
Day-Elder D-2	3	1 1/2	1 1/2	1 1/2	V	4	1 1/2	9	1 3/4	35	2	V	45	2	1/4	2	45	2	1/4	2	125	35
Day-Elder C-2 1/2	3	1 1/2	1 1/2	1 1/2	V	10 1/2	2	12	1 3/4	36 3/4	2	V	52	2 1/4	1/4	2	52	2 1/4	1/4	2	123	35
Day-Elder F-3 1/2	3	1 1/2	1 1/2	1 1/2	V	6 3/4	1 1/4	12	1 1/4	35 1/2	1 1/2	F	56 1/2	2 1/2	1/4	2	56 1/2	2 1/2	1/4	2	148	35
Day-Elder E-5	4	1 1/2	1 1/2	1 1/2	V	12 1/2	2	10	1 3/4	38 1/2	1 1/2	F	69	3	1/4	2	69	3	1/4	2	155	37
Dearborn BW-2-1915-17-19-20	3	1 1/2	1 1/2	1 1/2	V	8 3/4	2	6	1 3/4	37	1	F	18	2 1/2	1/4	2	18	1 1/2	1/4	2	130	32
Dearborn F-1 1/2-1915-17-19-20	3	1 1/2	1 1/2	1 1/2	V	12	2	8	1 3/4	37	1	F	16 1/2	2 1/2	1/4	2	16 1/2	1 1/2	1/4	2	96 1/2	34
Dearborn C-1-1915-17-19-20	3	1 1/2	1 1/2	1 1/2	V	10	2	8	2	40 3/4	1 1/4	F	38	2	1/4	1	38	2	1/4	1	107	32
Defiance B-1 1/2-1918-19-20	3	1 1/2	1 1/2	1 1/2	V	10	2	8	2	40 3/4	1 1/4	F	45	2 1/4	1/4	1	43	2 1/4	1/4	1	116	34
Defiance C-2-1918-19-20	3	1 1/2	1 1/2	1 1/2	V	10	2	8	2	40 3/4	1 1/4	F	45	2 1/4	1/4	1	43	2 1/4	1/4	1	116	34
Defiance D-1920-21	3	1 1/2	1 1/2	1 1/2	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	45	2 1/4	1/4	1	43	2 1/4	1/4	1	120	34
Defiance E-1920-21	3	1 1/2	1 1/2	1 1/2	V	10	2	8 1/2	1 1/4	40 3/4	1 1/4	F	54 1/2	2 1/4	1/4	1	52 1/2	2 1/4	1/4	1	120	34
Denby 31-1-1922	3	1 1/2	1 1/2	1 1/2	V	6	2 3/4	19	2 3/4	38 3/8	1 1/4	F	49	2 1/4	1/4	2	47 1/2	2 1/4	1/4	2	97 1/2	34
Denby 33-1 1/2-1922	3	1 1/2	1 1/2	1 1/2	V	9	2	12	2	41 1/4	1 1/4	V	8 1/4	4	1/4	2	46 1/2	1 1/2	1/4	2	120	33 1/2
Denby 34-1922	3	1 1/2	1 1/2	1 1/2	V	9	2	12	2	41 1/4	1 1/4	V	53 1/4	3	1/4	2	50 1/4	2	1/4	2	127	34
Denby 35-2 1/2-1922	3	1 1/2	1 1/2	1 1/2	V	6 1/4	2	14 1/4	1 3/4	38 1/2	1 1/2	F	8 1/4	4	1/4	2	47 1/4	2	1/4	2	143 1/4	33 1/2
Denby 27-4-1922	3	1 1/2	1 1/2	1 1/2	V	13	1 3/4	16 1/4	1 1/2	38 1/2	1 1/2	F	8 1/4	4	1/4	2	58	2 1/4	1/4	2	140	34
Denby 210-5-1922	3	1 1/2	1 1/2	1 1/2	V	13	1 3/4	16 1/4	1 1/2	38 1/2	1 1/2	F	8 1/4	4	1/4	2	89	2 1/4	1/4	2	140	34
Dependable Dispatch A-1 1/2-1921-22	4	1 1/2	1 1/2	1 1/2	V	14	2 1/4	15	1 1/4	37 1/2	2	F	53 1/4	2 1/4	1/4	1	38 1/2	2 1/4	1/4	1	108	33 1/2
Dependable C-2-1920-21-22	4	1 1/2	1 1/2	1 1/2	V	14	2 1/4	15	1 1/4	37 1/2	2	F	53 1/4	2 1/4	1/4	1	38 1/2	2 1/4	1/4	1	121	33
Dependable D-2 1/2-1920-21-22	4	1 1/2	1 1/2	1 1/2	V	10	2 1/4	11 1/2	1 1/4	37 1/2	2	F	53 1/4	2 1/4	1/4	1	38 1/2	2 1/4	1/4	1	140	33
Dependable E-3-1920-21-22	4	1 1/2	1 1/2	1 1/2	V	10	2 1/4	11 1/2	1 1/4	37 1/2	2	F	63	2 1/2	1/4	1	49	2 1/2	1/4	1	152	33
Dependable G-3 1/2-1921-22	4	1 1/2	1 1/2	1 1/2	V	13	2	13	1 1/4	37 1/2	2	F	63									

Replacement Table—Continued

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME		
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Gary F-1-1½-1922	4	1¼	1¼	3/8									11	3	1¼	2	11	3	1¼	2	97½	34
Gary I-2-1922	4	1¼	1¼	3/8									24	3¼	1¼	2	24	3¼	1¼	2	120	34
Gary J-2½-1922	4	1¼	1¼	3/8									27	3¼	1¼	2	27	3¼	1¼	2	120	34
Gary K-3½-1922	4	1¼	1¼	3/8									32	3¼	1¼	2	32	3¼	1¼	2	148	36½
Gary M-5-1922	4	1¼	1¼	3/8									36½	4	1¼	2	36½	4	1¼	2	168	39
Gerstix K-2½-1920	4	1¼	1¼	1¼	H	12	2	14	1¼	36	2		20	2½	1¼	4	47	2¼	1¼	2	131	34
Gerstix M-1½-1920	4	1¼	1¼	1¼	H	12	2	14	1¼	36	2		46	2	1¼	2	46	2	1¼	2	114	32
Gerstix L-3½	4	1¼	1¼	1¼	H	13½	2	16	1¼	36	2		56	2½	1¼	2	56	2½	1¼	2	144	36½
Giant 15A-1½	3	1¼	1¼	1									19	2	1¼	4	19	2	1¼	4	116½	32
Giant 16-2½	3	1¼	1¼	1									45½	2	1¼	2	45½	2	1¼	2	140½	33
Giant 17-3½	3	1¼	1¼	1									56½	2½	1¼	2	46½	2½	1¼	2	183½	36
G.M.C. K-15	4	1¼	1¼	1½	V	8½	1½	8	1½	35½	1½	V	49½	2½	1¼	2	47	2½	1¼	2	89	34
G.M.C. K-16	4	1¼	1¼	1½	V	8½	1½	8	1½	35½	1½	V	49½	2½	1¼	2	47	2½	1¼	2	89	34
G.M.C. K-41	4	1¼	1¼	1½	V	10	1½	9½	1½	37½	1½	V	13	3¼	1¼	4	13	3¼	1¼	4	Opt	33
G.M.C. K-71	4	1¼	1¼	1½	V	11½	1½	9½	1½	37½	1½	V	15½	3¼	1¼	4	15½	3¼	1¼	4	Opt	38
G.M.C. K-101	4	1¼	1¼	1½	V	11½	1½	9½	1½	37½	1½	V	17½	4	1¼	4	17½	4	1¼	4	Opt	38
Gramm-Pioneer 10 Speed-1921	3	1¼	1¼	1½	V	12	2½	14½	2½	29	1	F	48	2	1¼	2	26	2	1¼	1	97	30½
Gramm-Pioneer 15-1½-1921	3	1¼	1¼	1½	V	10½	2	6	2	39	1¼	F	48½	2	1¼	2	45½	1½	1¼	2	120	32
Gramm-Pioneer 65-1½-1921	3	1¼	1¼	1½	V	10½	2	6	2	39	1¼	F	19½	1¼	1¼	4	19½	1¼	1¼	4	120	32
Gramm-Pioneer 20-2-1921	3	1¼	1¼	1½	V	4½	1½	12	1½	32	2	F	45	2	1¼	4	45	2	1¼	4	126	32
Gramm-Pioneer 30-3-1922	3	1¼	1¼	1½	V	11	1½	9	1½	33½	2	F	22½	2¼	1¼	4	22½	2¼	1¼	4	129½	36
Gramm-Pioneer 75P-3½-1922	3	1¼	1¼	1½	V	11	1½	9	1½	33½	2	F	22½	2¼	1¼	4	22½	2¼	1¼	4	129½	36
Gramm-Pioneer 40-4-1922	3	1¼	1¼	1½	V	11	1½	9	1½	33½	2	F	28½	2¼	1¼	4	28½	2¼	1¼	4	144	36
Gramm-Pioneer 50-5-6-1922	3	1¼	1¼	1½	V	23½	2	13½	2	40½	2	F	32½	2¼	1¼	4	32½	2¼	1¼	4	162	36
G. W. W.	3	1¼	1¼	1½	V	12	1½	11	1½	37	2	F	49	2½	1¼	2	47	1½	1¼	2	89	32
Hall 2-Worm-2½	3	1¼	1¼	1									11½	3	1¼	4	11½	3	1¼	4	144	38
Hall 3½-Worm	3	1¼	1¼	1									15	3¼	1¼	4	15	3¼	1¼	4	180	39
Hall 5-Worm	3	1¼	1¼	1									18	4	1¼	4	18	4	1¼	4	144	39
Hall 7-Chain	3	1¼	1¼	1									18	4	1¼	4	18	4	1¼	4	144	39
Harvey WOA-2	4	1¼	2	2	V	11	2	14	1¼	35½	2	F	45	2	1¼	2	45	2	1¼	2	136	32
Harvey WFA-2½	4	1¼	2	2	V	11	2	14	1¼	35½	2	F	50	2¼	1¼	2	50	2¼	1¼	2	136	32
Harvey WHA-3½	4	1¼	2	2	V	12	2	14	1¼	35½	2	F	56½	2¼	1¼	2	56½	2¼	1¼	2	144	35
Headrickson N-2½	3	1¼	1¼	1									12	3¼	1¼	4	12	3¼	1¼	4	Opt	32½
Headrickson M-3½	3	1¼	1¼	1									16	3¼	1¼	4	16	3¼	1¼	4	Opt	36
Headrickson K-5	3	1¼	1¼	1									18	4	1¼	4	18	4	1¼	4	Opt	38
Highway Knight A	3	1¼	1¼	1									57	2½	1¼	2	57	2½	1¼	2	147	38
Highway Knight B-5	3	1¼	1¼	1									69	3	1¼	2	69	3	1¼	2	147	38
Higraide A18-1-1918-19	3	1¼	1¼	1	V	9	2	7	2	32	1½	R	12	1½	1¼	2	12	1½	1¼	2	85	32
Higraide B20-1½-1919-20	3	1¼	1¼	1	V	9	2	7	2	32	1½	R	18	2	1¼	2	18	2	1¼	2	100	32
Hurlburt A1½-2	3	1¼	1¼	1									22	2	1¼	2	22	2	1¼	2	132	35½
Hurlburt B2½	3	1¼	1¼	1									24	2½	1¼	2	23	2½	1¼	2	154	34
Hurlburt C3½-4	3	1¼	1¼	1									26	3	1¼	2	25	3	1¼	2	144½	34
Hurlburt D5-5½	3	1¼	1¼	1									28	3	1¼	2	27	3	1¼	2	144½	34
Huron-Erie 1½	4	1¼	1¼	1									15	3	1¼	2	50	2	1¼	2	121	33
Huron-Michigan 2½	4	1¼	1¼	1									15	3	1¼	2	50	2½	1¼	2	145	33
Indiana 12-1½-1921	3	1¼	1¼	1									17½	2	1¼	4	17½	2	1¼	4	108	32
Indiana 20-2-1921	3	1¼	1¼	1									44	2	1¼	2	44	2	1¼	2	126	33
Indiana 25-2½-1921	3	1¼	1¼	1									51	2¼	1¼	2	51	2¼	1¼	2	138	33
Indiana 35-3½-1921	3	1¼	1¼	1									56	2½	1¼	2	56	2½	1¼	2	144	34½
Indiana 51-5-1921	3	1¼	1¼	1									68	3	1¼	2	68	3	1¼	2	156	37½
International S-1500 lbs.—Speed Truck '21	3	1¼	1¼	1	V	9½	2½	17½	2½	30½	1	F	38	2	1¼	2	36	2	1¼	2	90	34
International 21-2000 lbs.—1916-21	3	1¼	1¼	1	V	6	1¼	13	1¼	38½	1½	F	43½	2¼	1¼	2	43½	2¼	1¼	2	75	34
International 31-3000 lbs.—1916-21	3	1¼	1¼	1	V	6	1¼	13	1¼	38½	1½	F	43½	2¼	1¼	2	43½	2¼	1¼	2	106½	34
International 41-4000 lbs.—1918-21	3	1¼	1¼	1	V	6	1¼	13	1¼	38½	1½	F	50½	2¼	1¼	2	50½	2¼	1¼	2	111	32½
International 61-6000 lbs.—1918-21	4	1¼	1¼	1	V	9	2½	14½	2	38½	1½		50½	2¼	1¼	2	50½	2¼	1¼	2	118	34
International 101-10,000 lbs.—1920-21	4	1¼	1¼	1	V	9	2½	14½	2	38½	1½		73	2½	1¼	2	73	2½	1¼	2	147½	34
Jackson B 3½	3	1¼	1¼	1	V	11	1½	8	1½	32½	1¼	F	58½	3¼	1¼	2	58½	3¼	1¼	2	150	36
Kalamazoo G-2-1½	3	1¼	1¼	1									50	2½	1¼	1	48	2½	1¼	1	120	32½
Kalamazoo H-2½	3	1¼	1¼	1									90	2½	1¼	1	60	2½	1¼	1	144	33
Kalamazoo K-3½	3	1¼	1¼	1									60	2½	1¼	1	60	2½	1¼	1	152	36
Kalamazoo K5-5	3	1¼	1¼	1									68	3	1¼	2	68	3	1¼	2	152	36
Kearns H-1	3	1¼	1¼	1	H	16	2	16	2	33	1	F	42	2	1¼	1	21	2	1¼	1	90	34
Kearns N-2	4	1¼	1¼	1	H	18	2	18	2	33	1	F	45	2½	1¼	1	22	2½	1¼	1	120	34
Kelly-Springfield K31 1½	4																					

Replacement Table—Continued

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME		
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Larrabee W-5—1920.....	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	6	1 1/4	36	1 1/4	F	72	3	1 1/4	2	72	3	1 1/4	2	152	36
Larrabee T—1918-19.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	6	1 1/4	36	1 1/4	F	72	3	1 1/4	2	72	3	1 1/4	2	157	36
Luedinghaus K2—1919-20.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	6	1 1/4	36	1 1/4	F	53.4	3	1 1/4	2	38 1/2	3	1 1/4	2	120	34
Luedinghaus K2-LS—1920.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	5	1 1/4	36	1 1/4	F	53.4	3	1 1/4	2	38 1/2	3	1 1/4	2	145 1/2	34
Luverne BBL-2.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	5	1 1/4	36	1 1/4	F	53.4	3	1 1/4	2	38 1/2	3	1 1/4	2	108	34
Maccar L-1 1/2—1915-20-21-22.....	3	1 1/4	1 1/4	1 1/4	V	3 1/2	1 1/4	10	1 1/4	30 1/2	1 1/4	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	128 1/2	34
Maccar H-2, 2 1/2—1921-22.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	15 1/2	1 1/4	41 1/2	1 1/4	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	141 1/2	34
Maccar HA 1921-22.....	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 1/4	17 1/2	1 1/4	41 1/2	1 1/4	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	143 1/2	34
Maccar M3—1922.....	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 1/4	15 1/2	1 1/4	41 1/2	1 1/4	F	14 1/2	3 1/2	1 1/4	4	14 1/2	3 1/2	1 1/4	4	155 1/2	34
Maccar G—1919-20-21-22.....	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2	20 1/2	2	40 1/2	2	F	18	4	1 1/4	4	18	4	1 1/4	4	166 1/2	37 1/2
MacDonald A-7 1/2.....	4	1 1/4	1 1/4	1 1/4	V	12	2	21	1 1/4	35	1 1/4	F	70	3	1 1/4	1	34	3	1 1/4	1	Opt	33 1/2
Mack AB 1 1/2, 2, 2 1/2-Ton-Chain '16-20	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	4 1/2	1 1/4	33	1 1/4	F	12 1/2	4	1 1/4	2	16 1/2	2 1/2	1 1/4	2	Opt	33 1/2
Mack Dual Reduction, 1 1/2, 2 1/2-1921	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	4 1/2	1 1/4	33	1 1/4	F	12 1/2	4	1 1/4	2	16 1/2	2 1/2	1 1/4	2	Opt	33 1/2
Mack AB-Tractor 5 Ton—'16-20.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	4 1/2	1 1/4	33	1 1/4	F	12 1/2	4	1 1/4	2	16 1/2	2 1/2	1 1/4	2	Opt	33 1/2
Mack AC 3 1/2 to 7 1/2 ton—'16-20.....	4	1 1/4	1 1/4	1 1/4	V	5 1/2	2 1/4	4 1/2	1 1/4	96	1	V	16 1/2	3	1 1/4	4	20 1/2	3 1/2	1 1/4	4	77	33 1/2
Mack AC Trac. 7 to 15 Ton—'16-20.....	4	1 1/4	1 1/4	1 1/4	V	5 1/2	2 1/4	4 1/2	1 1/4	96	1	V	16 1/2	3	1 1/4	4	20 1/2	3 1/2	1 1/4	4	77	33 1/2
Master JI-1 1/2—1919-20.....	4	1 1/4	1 1/4	1 1/4	H	13 1/2	2	12 1/2	1 1/4	30 1/2	1	F	74 1/2	2 1/2	1 1/4	1	74 1/2	2 1/2	1 1/4	1	87	37 1/2
Master JW-1 1/2—1919-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	30 1/2	1	F	12	3 1/2	1 1/4	2	12	3 1/2	1 1/4	2	117 1/2	34 1/2
Master M-2 1/2—1916-20.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	33	1 1/4	F	74 1/2	2 1/2	1 1/4	1	74 1/2	2 1/2	1 1/4	1	117 1/2	34 1/2
Master O 2 1/2—1917-20.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	33	1 1/4	F	74 1/2	2 1/2	1 1/4	1	74 1/2	2 1/2	1 1/4	1	156 1/2	34
Master W-2 1/2—1916-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	31	1 1/4	F	13 1/2	3 1/2	1 1/4	2	13 1/2	3 1/2	1 1/4	2	117 1/2	34
Master WL 2 1/2—1917-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	31	1 1/4	F	13 1/2	3 1/2	1 1/4	2	13 1/2	3 1/2	1 1/4	2	156 1/2	34
Master D-2 1/2—1920-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	35	1 1/4	F	8 1/2	4 1/2	1 1/4	2	54 1/2	3	1 1/4	2	117 1/2	34
Master DL-2 1/2—1920-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	35	1 1/4	F	8 1/2	4 1/2	1 1/4	2	54 1/2	3	1 1/4	2	156 1/2	34
Master T-6 Tractor—1917-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	33	1 1/4	F	74 1/2	2 1/2	1 1/4	1	74 1/2	2 1/2	1 1/4	1	72 1/2	34
Master A-3 1/2—1918-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	35	2	F	16	3 1/2	1 1/4	2	16	3 1/2	1 1/4	2	147 1/2	36 1/2
Master AL-3 1/2—1918-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	35	2	F	16	3 1/2	1 1/4	2	16	3 1/2	1 1/4	2	183 1/2	36 1/2
Master E-3 1/2—1920-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	35	2	F	11	6	1 1/4	2	25	4	1 1/4	4	147 1/2	36 1/2
Master EL-3 1/2—1920-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	35	2	F	11	6	1 1/4	2	25	4	1 1/4	4	183 1/2	36 1/2
Master B-5—1919-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	37	2	F	18	4	1 1/4	2	18	4	1 1/4	2	162 1/2	39
Master BL-5—1919-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	37	2	F	18	4	1 1/4	2	18	4	1 1/4	2	186 1/2	39
Master F-5—1920-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	37	2	F	11	6	1 1/4	2	25	4	1 1/4	4	162 1/2	39
Master FL-5—1920-22.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	37	2	F	11	6	1 1/4	2	25	4	1 1/4	4	186 1/2	39
Master DT-6 Tractor—1921-22.....	4	1 1/4	1 1/4	1 1/4	H	13 1/2	2	12 1/2	1 1/4	35	1 1/4	F	8 1/2	4 1/2	1 1/4	2	54 1/2	3	1 1/4	2	72 1/2	43
Maxwell 1 1/2—1917-20.....	3	1 1/4	1 1/4	1 1/4	V	6 1/4	2 1/4	7 1/4	2 1/4	44 1/4	1 1/4	F	16	1 1/4	1 1/4	4	16	1 1/4	1 1/4	4	102	36
Menominee HT-1—1918-20.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	104	32
Menominee H-1 1/2—1916-20.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	122	32
Menominee D-2—1915-20.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	146	32
Menominee G-3 1/2—1916-20.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	149	36
Menominee J-5—1917-20.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	149	38
Menominee HT-1—1920-late.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	102 1/2	32
Menominee H-1—1920-late.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	124	32
Menominee D-2—1920-late.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	131 1/2	32
Menominee G-3 1/2—1920-late.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	149	36
Menominee J-5—1920-late.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	33 1/4	1 1/4	F	47 1/4	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	149	38
Moline 10.....	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2 1/4	4 1/2	2 1/4	42	1 1/4	F	21	2 1/4	1 1/4	2	20	2	1 1/4	2	108	32
Moreland 21B-1 1/2—1919-20-21.....	3	1 1/4	1 1/4	1 1/4	H	9	1															

Replacement Table—Continued

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME			
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length	Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All	
Patriot Washington Special-3—1922.	3	1 1/4	1 1/4	3/4	V	11	1 1/4	10	2	39	2	F	58	2 1/4	1	4	43	2 1/4	1	150	67 1/2	150	67 1/2
Pierce Arrow-2-X-5.	3	1 1/4	1 1/4	1 1/4	V	16 1/2	2 1/4	14 1/4	2 1/4	43 1/2	1 1/4	F	22 1/4	2 1/4	1	4	22 1/4	2 1/4	1	125 1/4	34 1/4	125 1/4	34 1/4
Pierce Arrow-3 1/2-W-2.	3	1 1/4	1 1/4	1 1/4	V	11	2 1/4	15 1/2	2 1/4	43 1/2	1 1/4	F	9 1/4	2 1/4	1	18	2 1/4	1	133 1/4	38 1/4	133 1/4	38 1/4	
Pierce Arrow-5-R-10.	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	15 1/2	2 1/4	43 1/2	1 1/4	F	9 1/4	2 1/4	1	20 1/2	2 1/4	1	139 1/4	38 1/4	139 1/4	38 1/4	
Pittsburgher 2 1/2—1919-20.	3	1 1/4	1 1/4	1 1/4	V	13	2	12	2	35	1	F	52	2 1/4	1	4	52	2 1/4	1	136	33	136	33
Pioneer 59A-1.	3	1 1/4	1 1/4	1 1/4	V	5	1 1/4	13	1 1/4	31 1/2	1 1/4	F	14	1 1/4	1	4	14	1 1/4	1	102	30	102	30
Rainier R-8-2.	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	14 1/4	1 1/4	41	1 1/4	F	44 1/2	2	1	4	44 1/2	2	1	113	34	113	34
Rainier R6-1 1/2.	3	1 1/4	1 1/4	1 1/4	V	8 1/2	1 1/4	14 1/4	1 1/4	41	1 1/4	F	19	2	2	10	19	2	2	100	34	100	34
Rainier R-19-1.	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	14 1/4	1 1/4	42	1 1/4	F	11 1/2	3	2	11 1/2	3	2	90	34	90	34	
Rainier R11-3/4.	3	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	10 1/4	1 1/4	33 1/2	1 1/4	F	11 1/2	3	2	11 1/2	3	2	106 1/2	33	106 1/2	33	
Ranger TK-22-1 1/2.	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2 1/4	13 1/2	1 1/4	35	2	F	17	2	2	17	2	2	122	32	122	32	
Reliance 10A-1 1/2—1920-21.	4	1 1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	13 1/2	1 1/4	35	2	F	17	2	2	17	2	2	122	32	122	32	
Reliance 20B-2 1/2—1920-21.	4	1 1/4	1 1/4	1 1/4	V	5 1/2	1	5 1/2	1	39	1	F	43	2 1/4	1	1	39 1/2	2	1	82	30	82	30
Reo F—1500-2500-lbs.	3	1	1	1	V	12 1/4	2	6	2	40	1 1/4	F	21 1/4	2 1/4	1	4	19 1/2	2 1/4	1	118	34	118	34
Republic 10-1-10E-1-1919-20-21-22.	3	1	1	1	V	12 1/4	2	6	2	40	1 1/4	F	25 1/4	2 1/4	1	4	24 1/4	2 1/4	1	121	34	121	34
Republic 11X-1 1/2—1919-20-21-22.	3	1	1	1	V	8	1 1/4	11 1/4	1 1/4	32	1 1/4	F	25 1/4	2 1/4	1	4	24 1/4	2 1/4	1	146	37	146	37
Republic 19-2 1/2—1919-20-21-22.	3	1 1/4	1 1/4	1 1/4	V	7 1/4	1 1/4	5 1/4	1 1/4	36 1/4	1 1/4	F	55 1/2	3 1/2	2	30 1/4	4 1/4	1	146	37	146	37	
Republic 20-3 1/2—1919-20-21-22.	3	1 1/4	1 1/4	1 1/4	V	12	1 1/4	18 1/2	2 1/4	31 1/4	1 1/4	F	19	2	2	18	2	2	95	31	95	31	
Republic Rapid Transit-3/4—1921-22.	3	1	1	1	V	9 1/4	1 1/4	8	1 1/4	49 1/2	1 1/4	V	7 1/4	4 1/2	2	20	4	4	150	38	150	38	
Riker B3, B4-4.	4	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	10 1/4	1 1/4	32 1/2	1 1/4	F	19	2	2	19	2	2	113	33	113	33	
Rowe CW-1 1/2—1918-19-20.	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	10 1/4	1 1/4	32 1/2	1 1/4	F	45	2	2	45	2	2	123	33	123	33	
Rowe CDW2—1916-20.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	15 1/2	1 1/4	36 1/4	2	F	51 1/4	2 1/4	4	56 1/4	2 1/4	4	140	33	140	33	
Rowe GSW3—1918-20.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	15 1/2	1 1/4	36 1/4	2	F	56 1/4	2 1/4	4	56 1/4	2 1/4	4	146	36	146	36	
Rowe HW4—1918-20.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	15 1/2	1 1/4	36 1/4	2	F	56 1/4	2 1/4	4	56 1/4	2 1/4	4	146	36	146	36	
Rowe FW5—1914-20.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	15 1/2	1 1/4	36 1/4	2	F	68	3	4	68	3	4	153	38 1/2	153	38 1/2	
Rowe GPW3—1916-17, 1919-20.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	6	1 1/4	37	2	F	18	2	2	18	2	2	152	33	152	33	
Rumely A-1 1/2.	4	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	10 1/4	1 1/4	37 1/2	2	F	37	2	2	37	2	2	122	34	122	34	
Samson 15-5.	3	1 1/4	1 1/4	1 1/4	V	6 1/2	1 1/4	7 1/4	1 1/4	37 1/2	1 1/4	V	43 1/2	2	1	1	35 1/2	1 1/4	1	108 1/4	39 1/4	108 1/4	39 1/4
Samson 25-1 1/2.	3	1 1/4	1 1/4	1 1/4	V	6 1/2	1 1/4	7 1/4	1 1/4	37 1/2	1 1/4	V	43 1/2	2	1	1	35 1/2	1 1/4	1	108 1/4	39 1/4	108 1/4	39 1/4
Sanford 25-2 1/2—1917-20.	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	10 1/4	1 1/4	37 1/2	2	F	51 1/4	2 1/4	2	56	2 1/4	2	144	35	144	35	
Sanford W35-2 1/2—1917-20.	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	10 1/4	1 1/4	37 1/2	2	F	51 1/4	2 1/4	2	56	2 1/4	2	145	35	145	35	
Sanford W50-5—1917-20.	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	10 1/4	1 1/4	37 1/2	2	F	69	3	2	69	3	2	145	35	145	35	
Schacht F-2.	4	1 1/4	1 1/4	1 1/4	H	11	2	14	1 1/4	37 1/2	2	F	81 1/4	3	4	13 1/2	3	4	140	35 1/4	140	35 1/4	
Schacht F-3.	4	1 1/4	1 1/4	1 1/4	H	11	2	14	1 1/4	37 1/2	2	F	81 1/4	3	4	13 1/2	3	4	140	35 1/4	140	35 1/4	
Schacht F-4.	4	1 1/4	1 1/4	1 1/4	H	10 1/4	2	13 1/4	1 1/4	39 1/4	2 1/4	V	81 1/4	3	4	15	4	4	152	35 1/4	152	35 1/4	
Schacht F-5.	4	1 1/4	1 1/4	1 1/4	H	10 1/4	2	13 1/4	1 1/4	39 1/4	2 1/4	V	81 1/4	3	4	15	4	4	152	35 1/4	152	35 1/4	
Schacht F-6.	4	1 1/4	1 1/4	1 1/4	H	10 1/4	2	13 1/4	1 1/4	39 1/4	2 1/4	V	81 1/4	3	4	15	4	4	152	35 1/4	152	35 1/4	
Schacht F-7.	4	1 1/4	1 1/4	1 1/4	H	10 1/4	2	13 1/4	1 1/4	39 1/4	2 1/4	V	81 1/4	3	4	15	4	4	152	35 1/4	152	35 1/4	
Schwartz A-1 1/2—1921.	3	1	1	1	V	9 1/2	1 1/4	13	1 1/4	29 1/4	1 1/4	F	19 1/4	1 1/4	4	19 1/4	1 1/4	4	120	34	120	34	
Schwartz BW-1 1/2.	3	1	1	1	V	10	1 1/4	18	1 1/4	33 1/2	2	F	19	2	2	19	2	2	120	34	120	34	
Schwartz CWS-CW-CWL-2 1/2.	4	1 1/4	1 1/4	1 1/4	H	10 1/4	2	15	1 1/4	33 1/2	2	F	48	2 1/4	2	48	2 1/4	2	120	34	120	34	
Schwartz DWS-DW-DWL-5.	4	1 1/4	1 1/4	1 1/4	H	12 1/2	2	17	1 1/4	38 1/2	2	F	69 1/4	3	2	69 1/4	3	2	120	34	120	34	
Selden Unit 30—1919-20.	3	1	1	1	V	12	1 1/4	12	1 1/4	41	1 1/4	F	11 1/4	3 1/4	4	11 1/4	3 1/4	4	114	34	114	34	
Selden Unit 50—1920.	3	1	1	1	V	12	1 1/4	12	1 1/4	41	1 1/4	F	11 1/4	3 1/4	4	11 1/4	3 1/4	4	114	34	114	34	
Selden Unit 31.	3	1	1	1	V	9	1 1/4	12	1 1/4	31	1 1/4	F	13	3 1/4	4	13	3 1/4	4	176	34	176	34	
Selden Unit 70—1919-20.	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	12	1 1/4	34 1/4	1 1/4	F	15 1/4	3 1/4	4	15 1/4	3 1/4	4	153	37 1/4	153	37 1/4	
Selden Unit 51.	3	1 1/4	1 1/4	1 1/4	V	7 1/4	1 1/4	15 1/2	1 1/4	31 1/2	2	F	15 1/4	3 1/4	4	15 1/4	3 1/4	4	209	37 1/4	209	37 1/4	
Selden Unit 90—1920.	3	1 1/4	1 1/4	1 1/4	V	7	1 1/4	20 1/2	2	40 1/4	2	F	17 1/4	4	4	17 1/4	4	4	153	37 1/4	153	37 1/4	
Service 12-3/4-1922.	3	1 1/4	1 1/4	1 1/4	V	13 1/4	2 1/4	14 1/4	2 1/4	35 1/2	1 1/4	F	10 1/4	2 1/4	4	10 1/4	2 1/4	4	101 1/4	37	101		

Replacement Table—Continued

Name, Model and Tonnage	ENGINE											BRAKE LINING								FRAME	
	Piston Rings	Carburetor	Upper Hose	Lower Hose	Fan Belt			Service			Emergency			Length	Width						
					Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width			Thickness	No. of Pieces				
No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Over All
Traffic C-4000-1919-20.....	3	1	1	H	10 1/4	2	10 1/4	2	41 1/4	1 1/4	F	43 1/2	2 1/2	1	2	38	1 1/4	1	2	120 1/2	42
Traffic 6000-1921.....	3	1	1	H	10 1/4	2	10 1/4	2	41 1/4	1 1/4	F	43 1/2	2 1/2	1	2	38	1 1/4	1	2	120 1/2	34
Traffic Speedboy-1921.....	3	1	1	H	10 1/4	2	10 1/4	2	41 1/4	1 1/4	F	43 1/2	2 1/2	1	2	38	1 1/4	1	2	86	34
Transport 15-1.....	3	1	1	V	12	2	12	2	36 1/2	1 1/4	F	48 1/2	2 1/2	1	2	46 1/2	1 1/4	1	2	34	34
Transport 25-1 1/2.....	3	1	1	V	10 1/4	2	13	2	40 1/2	1 1/4	F	48 1/2	2 1/2	1	2	46 1/2	1 1/4	1	2	34	34
Transport 35-2.....	3	1 1/4	1 1/4	V	9 1/4	2	10	1 1/4	32 1/2	1 1/4	F	48 1/2	2 1/2	1	2	46 1/2	1 1/4	1	2	34	34
Transport 60-3 1/2.....	4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	2	F	11 1/2	3	2	58	2 1/2	1	2	36 1/2	34	
Traylor B-1 1/2.....	4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	2	F	11 1/2	3	2	58	2 1/2	1	2	117	34	
Traylor C-2-2 1/2.....	4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	2	F	50	2 1/2	2	50	2 1/2	2	50	122	34	
Traylor D-3-3 1/2.....	4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	2	F	56 1/2	2 1/2	2	56 1/2	2 1/2	2	56 1/2	142	34	
Traylor F-5-6.....	4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	2	F	59	2 1/2	2	59	2 1/2	2	59	165	35	
Triangle AA-1 1/2-1920.....	3	1	1	H	17	2	17	2	34	1 1/4	F	22	2 1/2	1	41	2	2	94	35	35	
Triangle A-1 1/2-1918-20.....	3	1	1	V	14	1 1/4	14 1/4	1 1/4	39 1/4	1 1/4	F	7	4	2	49	2	2	126	34	34	
Triangle B-2 1/2-1919-20.....	3	1 1/4	1 1/4	V	18	1 1/2	18	1 1/2	39 1/4	1 1/4	F	7	4	2	52	3	2	132	34	34	
Triangle C-2-1920.....	3	1	1	V	14	1 1/4	14 1/4	1 1/4	39 1/4	1 1/4	F	7	4	2	52	3	2	129	34	34	
Triumph HB-2 1/2.....	4	1 1/4	1 1/4	V	9	1 1/4	17	1 1/4	32 1/2	2	F	46	2 1/2	2	32	2 1/2	2	120	34 1/2	34 1/2	
Triumph HC-2.....	4	1 1/4	1 1/4	V	9	1 1/4	17	1 1/4	32 1/2	2	F	46	2 1/2	2	32	2 1/2	2	120	34 1/2	34 1/2	
Ultimate A-2-1920.....	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	20	2 1/4	2	45	2	2	126	32 1/2	32 1/2	
Ultimate AJ2-1920.....	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	20	2 1/4	2	45	2	2	126	32 1/2	32 1/2	
Ultimate AJL-2-1920.....	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	20	2 1/4	2	45	2	2	150	32 1/2	32 1/2	
Ultimate B-3-1920.....	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	51	2 1/4	2	51	2 1/4	2	144	32 1/2	32 1/2	
Ultimate BL3-1920.....	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	51	2 1/4	2	51	2 1/4	2	192	32 1/2	32 1/2	
Ultimate D-5-1922.....	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	51	2 1/4	2	51	2 1/4	2	180	37 1/2	37 1/2	
Union F-2 1/2.....	3	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/2	1 1/4	F	55	3	1	50	2	1	133 1/2	32	32	
Union FW-2 1/2.....	3	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/2	1 1/4	F	26	4 1/2	1	52	3	1	133 1/2	32	32	
Union H-4.....	3	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/2	1 1/4	F	56 1/2	3 1/2	1	32	4 1/2	1	157 1/2	34	34	
Union HW-4.....	3	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/2	1 1/4	F	26	4 1/2	1	24	4	2	157 1/2	34	34	
Union JW-6.....	3	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	41 1/2	2	F	34	4	1	28	5	2	19C	36	36	
United 1 1/2.....	4	1 1/4	1 1/4	H	15	2 1/2	16	1 1/2	37 1/2	2	F	48	2	1	48	1 1/2	1	120	33	33	
United 2 1/2.....	4	1 1/4	1 1/4	H	12	2 1/2	12	1 1/2	37 1/2	2	F	49	3	1	49	2 1/2	1	Opt	33	33	
United 3 1/2.....	4	1 1/4	1 1/4	H	7	2 1/2	7	1 1/2	37 1/2	2	F	62	3	1	58	2 1/2	1	Opt	34	34	
United 5.....	4	1 1/4	1 1/4	H	14 1/2	2	12	1 1/2	37 1/2	2	F	88 1/2	2 1/4	1	88 1/2	2 1/4	1	Opt	38	38	
U.S.N.-1 1/2.....	3	1	1	H	11 1/2	2	9	1 1/4	37	1 1/4	F	50 1/2	2 1/2	2	46 1/2	1 1/2	2	120	34	34	
U.S.R.-2 1/2-3.....	3	1	1	V	10	1 1/4	10	1 1/4	35	1 1/4	F	21	2 1/2	4	19 1/2	1 1/2	4	144	34	34	
U.S.S.-3 1/2-4.....	3	1 1/4	1 1/4	V	9	1 1/2	8	1 1/2	37	1 1/2	F	50	2 1/2	2	50	2 1/2	2	156	36	36	
U.S.T.-5-6.....	4	1 1/2	1 1/2	V	15	2	13	1 1/2	38 1/2	2	F	62	3	4	33	4	1	168	36	36	
U.S.U.-1 1/2.....	4	1 1/2	1 1/2	V	11 1/2	1 1/4	11 1/2	1 1/4	33	1 1/4	F	50 1/2	2 1/2	2	46 1/2	1 1/2	2	108	32	32	
Velie 46-1 1/2-1921.....	3	1	1	V	9 1/2	2 1/4	12 1/4	1 1/2	30 1/4	1	F	54 1/2	2 1/2	2	52 1/2	1 1/2	2	120	31	31	
Vim 29-1 1/2.....	3	1 1/2	1 1/2	V	10	1 1/2	10	1 1/2	30 1/4	1	F	14 1/2	1 1/2	4	14 1/2	1 1/2	4	64	30	30	
Vim 30-1 1/2.....	3	1 1/2	1 1/2	V	10	1 1/2	10	1 1/2	30 1/4	1	F	14 1/2	1 1/2	4	14 1/2	1 1/2	4	83 1/2	30	30	
Vim 31-1.....	4	1	1	V	10	1 1/2	10	1 1/2	40	1	F	18	2	4	18	2	4	92	32	32	
Vim 22-2.....	4	1	1	V	10	1 1/2	10	1 1/2	40	1	F	42 1/2	2	2	42 1/2	2	2	120 1/2	34	34	
Vim 23-3.....	5	1 1/2	1 1/2	V	10	1 1/2	10	1 1/2	40	1	F	48 1/2	2 1/4	2	48 1/2	2 1/4	2	160 1/2	34	34	
Walker M 1 1/2.....	3	1	1	V	10	1 1/2	10	1 1/2	40	1	F	43	2 1/4	2	43	2 1/4	2	90	32	32	
Walker P 3 1/2.....	3	1	1	V	10	1 1/2	10	1 1/2	53 1/2	3	F	19 1/2	2 1/2	2	19 1/2	2 1/2	2	140	35	35	
Walker N5.....	3	1	1	V	10	1 1/2	10	1 1/2	53 1/2	3	F	19 1/2	2 1/2	2	19 1/2	2 1/2	2	162	35	35	
Walker Model 22.....	3	1	1	V	10	1 1/2	10	1 1/2	53 1/2	3	F	16	2	2	16	2	2	99	32	32	
Walker Model 42.....	3	1	1	V	10	1 1/2	10	1 1/2	53 1/2	3	F	12	3 1/4	4	12	3 1/4	4	120	32	32	
Walker Johnson A-2.....	4	1 1/4	1 1/4	V	10	2	8	1 1/4	37	1 1/4	F	13	3 1/4	4	13	3 1/4	4	117	32	32	
Walker-Johnson B3.....	4	1 1/4	1 1/4	V	10	2	8	1 1/4	33 1/2	1 1/4	F	13	3 1/4	4	13	3 1/4	4	133	32 1/2	32 1/2	
Walter S-5.....	3	1	1	V	10	1 1/2	18	1 1/2	39	1 1/2	F	15	5	4	57	2 1/2	2	150	36	36	
Ward LaFrance 2B-2 1/2-3 1/2-1920.....	3	1 1/4	1 1/4	V	7	1 1/2	16	1 1/2	41 1/2	1 1/2	F	13	3 1/4	4	13	3 1/4	4	137 1/2	33	33	
Ward LaFrance 4A-3 1/2-5-1920.....	3	1 1/4	1 1/4	V	8 1/2	1 1/2	18	1 1/2	41 1/2	1 1/2	F	15 1/2	3 1/4	4	15 1/2	3 1/4	4	170	37	37	
Ward LaFrance 5A-5-7-1920.....	3	1 1/4	1 1/4	V	9 1/2	1 1/2	18	1 1/2	41 1/2	1 1/2	F	18	4	4	18	4	4	170	37	37	
Watson B1.....	4	1 1/4	1 1/4	V	16 1/2	1 1/4	4	1 1/4	40	1 1/4	F	41	1 1/4	2	41	1 1/4	2	90 1/2	30	30	
Watson N-3 1/2.....	3	1 1/4	1 1/4	V	16 1/2	1 1/4	3	1 1/4	34	1 1/4	F	62	2 1/2	2	47	2 1/2	2	147	37	37	
Watson U-5.....	3	1 1/4	1 1/4	V	16 1/2	1 1/4	3	1 1/4	38 1/2	1 1/4	F	15 1/2	3 1/4	4	15 1/2	3 1/4	4	163 1/2	32	32	
White Hickory H-1 1/2-1919.....	3	1 1/4	1 1/4	V	11	2	8	1 1/4	41	1 1/4	V	13 1/2	3 1/4	4	13 1/2	3 1/4	4	116 1/2	32	32	
White Hickory H-1 1/2-1920.....	3	1 1/4	1 1/4	V	11	2	8	1 1/4	41	1 1/4	V	11	3	4	11	3	4	116 1/2	32	32	
White Hickory E-1-1920.....	3	1 1/4	1 1/4	V	11	2	8	1 1/4	41	1 1/4	V	11	3	4	11	3	4	92 1/2	32 1/2	32 1/2	
White Hickory K-2 1/2-1920.....	3	1 1/4	1 1/4	V	9	1 1/2	8	1 1/2	33 1/4	1 1/4	F	13 1/2	3 1/4	4	13 1/2	3 1/4	4	150	32	32	
Wichita K-1-1915-20-21-22.....	3	1 1/4	1 1/4	V	18 1/2	1 1/2	12	1 1/2	52 1/2	1 1/2	F	19 1/2	2	4	19 1/2	2	4	127 1/2	30	30	
Wichita M-2-1915-20-21-22.....	3	1 1/4	1 1/4	V	18 1/2	1 1/2	12	1 1/2	52 1/2	1 1/2	F	49	2	2	49	2	2	126 1/2	30	30	
Wichita RX-2 1/2-1919-20-21-22.....	3	1 1/4	1 1/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	54	2 1/2	2	54	2 1/2	2	130	30	30	
Wichita O-3 1/2-1915-20-21-22.....	3	1 1/4	1 1/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	56 1/2	3	2	56 1/2	3	2	152 1/2	36	36	
Wichita S-5-1919-20-21-22.....	3	1 1/4	1 1/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	66	3	2	66	3	2	163 1/2	36	36	
Wilcox AA-1-1920.....	3	1 1/4	1 1/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	47 1/2	2 1/2	2	33 1/2	2 1/2	2	96	34	34	
Wilcox B-1 1/2-1920.....	3	1 1/4	1 1/4	V	11	1 1/2	11	1 1/2	40	1 1/2	F	47 1/2	2 1/2	2	33 1/2	2 1/2	2	132	33	33	
Wilcox C-2 1/2-1920.....	3	1 1/4	1 1/4	V																	

Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Pages Following—O, Own; Op or Opt, Optional

- 1** Engine: Beav—Beaver
Bud—Buda
Cont—Continental
Dodge—Dodge Bros.
GBS—Golden, Belknap & Her—Hercules
Hig—Highway
Hsp—Herschell-Spillman
LeR—Le Roi
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyc—Lycoming
Mid—Midwest
Ster—Sterling
Sup—Supreme
TC—Twin City
Vic—Victory
Wau—Waukesha
Wel—Weidely
Wis—Wisconsin
- 2** Valve Arrangement: H—Overhead
L—ELL—Head
T—TEE—Head
S—Sleeve
- 3** How Cooled: A—Air
B—Pump & Thermo
C—Centrifugal
G—Gear Pump
T—Thermo-Syphon
- 4** Radiator (Make): BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Feeders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
S-W—Sparks-Withington
Spar—Spartan
Spec—Special
Spli—Splitex
Stan—Standard
- 5** Radiator (Type): C—Cellular
H—Honeycomb
PT—Plain Tube
ZZT—Zig Zag Tube
Whee—Wheeler
- 6** FIN—Fin Tube
Lubrication: FS—Force and Splash
F—Force Feed
S—Splash
Carburetor: B & B—Ball & Ball
Bent—Bennett
Cart—Carter
Eag—Eagle
Eus—Eusign
Fleh—Fletcher
Holl—Holley
John—Johnson
King—Kingston
Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Shk—Shakespeare
Sheb—Shebler
Stew—Stewart
Till—Tillotson
Zen—Zenith
- 7** Fuel Feed: G—Gravity
P—Pressure
V—Vacuum
- 8** Governor: Con—Continental
Del—Delaney
Dup—Duplex
Hin—Hinkley
Mer—Merrill
McC—McCanna
Mon—Monarch
Mue—Mueller
Phar—Pharo
Pier—Pierce
Rug—Ruggles
Sim—Simplex
Wau—Waukesha
- 9** Clutch (Make): B. B.—Borg & Beck
B. Li.—Brown-Lipe
Covt—Covett
Det—Detlaff
Full—Fuller
D. G.—Detroit Gear & Mach.
Dod.—Dodge Bros.
GB & S—Golden, Belknap & Swartz
Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Munc.—Muncie
M-P—Muncie Products
T-D—Twin Disc
W-C—Warner Corporation
W-Gr—Warner Gear
- 10** Clutch (Type): D—Disc
C—Cone
DP—Dry Plate
WP—Wet Plate
WD—Wet Disc
- 11** Ignition System: Amr—American Swiss
Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Bos—Bosch
Ber—Berling
Con—Connecticut
Del—Delco
Eis—Eisemann
Kin—Kingston
KW—K. W. Ignition Co.
Lor—Lorraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse
- 12** Engine Starter: AC—Allis-Chalmers
AK—Atwater Kent
AL—Auto-Lite
Bj—Bijur
Bos—Bosch
DL—Delco
Dy—Dyneto
GD—Gray & Davis
LN—Leece-Neville
NE—North East
RE—Remy
Wg—Wagner
USL—U. S. L.
W—Westinghouse
- 13** Gearset: B—Li.—Brown-Lipe
Cott—Cotta
Covt—Covett
D-Sea—Driggs-Seabury
Det—Detroit
Dod.—Dodge Bros.
Dun—Dundore
Durst—Durstons
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Munc—Muncie
M-P—Muncie Products
Rock—Rockford
W-C—Warner Corporation
W-Gr—Warner Gear
- 14** Location of Gearset: A—Amidships
R—Rear
U—Unit with engine
J—Unit with jackshaft
Universal: A-B—Easton Mch. Co.
Acm—Acme
Arv—Arvac
Bear—Bearings Co.
Bld—Blood Brothers
Cli—Climax
Det—Detroit
Dit—Ditwiler
Eas—Easton
- 15** A—Amidships
R—Rear
U—Unit with engine
J—Unit with jackshaft
Universal: A-B—Easton Mch. Co.
Acm—Acme
Arv—Arvac
Bear—Bearings Co.
Bld—Blood Brothers
Cli—Climax
Det—Detroit
Dit—Ditwiler
Eas—Easton
- 16** A—Amidships
R—Rear
U—Unit with engine
J—Unit with jackshaft
Universal: A-B—Easton Mch. Co.
Acm—Acme
Arv—Arvac
Bear—Bearings Co.
Bld—Blood Brothers
Cli—Climax
Det—Detroit
Dit—Ditwiler
Eas—Easton
- 17** Final Drive: B—Bevel Gear
C—Chain
I—Internal Gear
N—Concentric Spur
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm
- 18** Rear Axle (Make): Amr—American
Badg—Badger
Fli—Flint
Col—Columbia
Stan—Chicago
Cl—Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Fli—Flint
Hind—Hindley
Ir.M—Iron Mt.
Kno—Kenosha
Stn—Stanweld
Rock—Rockford
- 19** Rear Axle (Type): Amr—American
Badg—Badger
Fli—Flint
Col—Columbia
Stan—Chicago
Cl—Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Fli—Flint
Hind—Hindley
Ir.M—Iron Mt.
Kno—Kenosha
Stn—Stanweld
Rock—Rockford
- 20** Steering Gear: CAS—C. A. S. Products Co.
Dit—Ditwiler
Dod.—Dodge Bros.
Gem—Gemmer
Jac—Jacox
KH—Keystone Hendley
Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
W-C—Warner Corporation
Woh—Wohlrab
- 21** Wheels: Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
E&O—Eberly & Oris
Hay—Haynes
Hoo—Hoopes Brothers
Jon—Jones
Kel—Kelsey
MM—Michigan Malleable Iron Co.
Mot—Motor Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Rus—Russell
Sal—Salisbury
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Wal—Walker
Wan—Wayne
W-L—Waterhouse & Lester
Wes—Western Wheel Co.
- 22** Rim Equipment: Bak—Baker
Det—Detroit
Fir—Firestone
Gdy—Goodyear
Hay—Hayes
Jax—Jaxon
Kel—Kelsey
Ken—Kennedy
- 23** Springs: All—Alloy Steel
Am—Am. Auto Parts
Bea—Beans
Cham—Champion
Coop—Cooper
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
Hig—Higgins
IC—Iron City
Jax—Jaxon
Kal—Kalamazoo
Lah—Laher
Lig—Liggett
Mar—Maremont
Math—Mathier
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
Ster—Sterling
Tem—Temme
Tut—Tuthill
US—United States
Wis—Wisconsin
- 24** Final Drive: B—Bevel Gear
C—Chain
I—Internal Gear
N—Concentric Spur
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm
- 25** Rear Axle (Make): Amr—American
Badg—Badger
Fli—Flint
Col—Columbia
Stan—Chicago
Cl—Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Fli—Flint
Hind—Hindley
Ir.M—Iron Mt.
Kno—Kenosha
Stn—Stanweld
Rock—Rockford
- 26** Rear Axle (Type): Amr—American
Badg—Badger
Fli—Flint
Col—Columbia
Stan—Chicago
Cl—Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Fli—Flint
Hind—Hindley
Ir.M—Iron Mt.
Kno—Kenosha
Stn—Stanweld
Rock—Rockford

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Also Replacement Table in "Service and Repair Departments." Truck Frame Dimensions Are Included in Replacement Table

(Where prices are not given it is because we have been unable to get them from authoritative sources)

* An asterisk in front of the model name indicates that corrections have been made somewhere in the specifications since the previous month

Trade Name and Model	Chassis Price	ENGINE DETAILS										GEARSET		REAR AXLE			Steering Gear	Tires, Wheels, Rims	Chassis Weight	P.R. Cent of Weight on Rear Wheels															
		Make and Model	Bore and Stroke	N. A. C. C.	Horsepower	Valve Arrange't	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System					Engine Starter	Make	Location	Speeds	Universal (Make)	Springs (Make)	Final Drive		Type	Total Gear Ratio in High	Total Gear Ratio in Low	Front	Rear	Wheels (Make)	Rim Equipment
1000 Pounds																																			
Dodge Brothers	730	Own	3 1/2 x 5 1/2	24	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	4.16	19.4	32x4	32x4	21	23	1987	114.66
*Dodge	685	Lyc K	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	4.45	15.13	31x4	31x4	Sag	Imp	2175	108
Vim 20	1050	Own	3 1/2 x 5 1/2	15.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	5.5	...	31x4	31x4	Fir	Hoo	2250	105
Vim 30	1175	Own	3 1/2 x 5 1/2	15.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	5.5	...	32x4 1/2	32x4 1/2	CAS	Hoo	2250	127
1500 Pounds																																			
Aasoon Fast	...	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	25	34x5	34x5	Ros	Bim	3080	142
*Brookway E	745	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	5.86	25	35x5	35x5	Gem	Fir	3450	135.70
Chevrolet G	1485	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	5	16.4	34x5	34x5	Jac	Fir	3200	138.65
Clydesdale 10	1890	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	5	16.6	34x5	34x5	Ros	Fir	3200	138.64
Clydesdale 18	1890	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	5	16.6	34x5	34x5	Ros	Fir	3200	138.64
*Garford 15	2200	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Gdy	3500	132
H. R. L. L.	1500	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Internat'l Speed Truck S	1350	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Napoleon 7	1990	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Ordan A2	1990	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Rainier R11	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Republic Rapid Transit	595	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Samson 15	1195	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Service 12	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Stewart 14	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Stoughton C	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Triangle A	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Watson B	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
White 15	1250	Own	3 1/2 x 5 1/2	19.6	16.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
Yellow Cab M-22-3	1690	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	6.25	22	34x5	34x5	Ros	Sch	3500	132
1 Ton																																			
Aasoon R	...	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Acme 20	...	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Aves G	...	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Apex	1750	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Armleder 20	2350	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Atlas Merchant's Dispatch	1185	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Avery	...	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Bell M	1495	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Bessener G	...	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Birch I	1285	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Caso Model A	1785	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Chevrolet 20	1125	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Clydesdale 20	2385	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Collier E-22	1480	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Corbett E-22	1600	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Day Elder AS	1600	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Dearborn E (Speed)	1695	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2	36x5 1/2	Ros	Bim	3650	142
Defiance G	1695	Own	3 1/2 x 5 1/2	22.5	19.6	L	C	McC	PT	FS	Stew	V	...	...	DD	NE	W	Full	W	U	3	MM	Det	W	Timk	1/2 Fl	7.20	34.5	36x5 1/2					

1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591	1590	1589	1588	1587	1586	1585	1584	1583	1582	1581	1580	1579	1578	1577	1576	1575	1574	1573	1572	1571	1570	1569	1568	1567	1566	1565	1564	1563	1562	1561	1560	1559	1558	1557	1556	1555	1554	1553	1552	1551	1550	1549	1548	1547	1546	1545	1544	1543	1542	1541	1540	1539	1538	1537	1536	1535	1534	1533	1532	1531	1530	1529	1528	1527	1526	1525	1524	1523	1522	1521	1520	1519	1518	1517	1516	1515	1514	1513	1512	1511	1510	1509	1508	1507	1506	1505	1504	1503	1502	1501	1500	1499	1498	1497	1496	1495	1494	1493	1492	1491	1490	1489	1488	1487	1486	1485	1484	1483	1482	1481	1480	1479	1478	1477	1476	1475	1474	1473	1472	1471	1470	1469	1468	1467	1466	1465	1464	1463	1462	1461	1460	1459	1458	1457	1456	1455	1454	1453	1452	1451	1450	1449	1448	1447	1446	1445	1444	1443	1442	1441	1440	1439	1438	1437	1436	1435	1434	1433	1432	1431	1430	1429	1428	1427	1426	1425	1424	1423	1422	1421	1420	1419	1418	1417	1416	1415	1414	1413	1412	1411	1410	1409	1408	1407	1406	1405	1404	1403	1402	1401	1400	1399	1398	1397	1396	1395	1394	1393	1392	1391	1390	1389	1388	1387	1386	1385	1384	1383	1382	1381	1380	1379	1378	1377	1376	1375	1374	1373	1372	1371	1370	1369	1368	1367	1366	1365	1364	1363	1362	1361	1360	1359	1358	1357	1356	1355	1354	1353	1352	1351	1350	1349	1348	1347	1346	1345	1344	1343	1342	1341	1340	1339	1338	1337	1336	1335	1334	1333	1332	1331	1330	1329	1328	1327	1326	1325	1324	1323	1322	1321	1320	1319	1318	1317	1316	1315	1314	1313	1312	1311	1310	1309	1308	1307	1306	1305	1304	1303	1302	1301	1300	1299	1298	1297	1296	1295	1294	1293	1292	1291	1290	1289	1288	1287	1286	1285	1284	1283	1282	1281	1280	1279	1278	1277	1276	1275	1274	1273	1272	1271	1270	1269	1268	1267	1266	1265	1264	1263	1262	1261	1260	1259	1258	1257	1256	1255	1254	1253	1252	1251	1250	1249	1248	1247	1246	1245	1244	1243	1242	1241	1240	1239	1238	1237	1236	1235	1234	1233	1232	1231	1230	1229	1228	1227	1226	1225	1224	1223	1222	1221	1220	1219	1218	1217	1216	1215	1214	1213	1212	1211	1210	1209	1208	1207	1206	1205	1204	1203	1202	1201	1200	1199	1198	1197	1196	1195	1194	1193	1192	1191	1190	1189	1188	1187	1186	1185	1184	1183	1182	1181	1180	1179	1178	1177	1176	1175	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1151	1150	1149	1148	1147	1146	1145	1144	1143	1142	1141	1140	1139	1138	1137	1136	1135	1134	1133	1132	1131	1130	1129	1128	1127	1126	1125	1124	1123	1122	1121	1120	1119	1118	1117	1116	1115	1114	1113	1112	1111	1110	1109	1108	1107	1106	1105	1104	1103	1102	1101	1100	1099	1098	1097	1096	1095	1094	1093	1092	1091	1090	1089	1088	1087	1086	1085	1084	1083	1082	1081	1080	1079	1078	1077	1076	1075	1074	1073	1072	1071	1070	1069	1068	1067	1066	1065	1064	1063	1062	1061	1060	1059	1058	1057	1056	1055	1054	1053	1052	1051	1050	1049	1048	1047	1046	1045	1044	1043	1042	1041	1040	1039	1038	1037	1036	1035	1034	1033	1032	1031	1030	1029	1028	1027	1026	1025	1024	1023	1022	1021	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1000	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984	983	982	981	980	979	978	977	976	975	974	973	972	971	970	969	968	967	966	965	964	963	962	961	960	959	958	957	956	955	954	953	952	951	950	949	948	947	946	945	944	943	942	941	940	939	938	937	936	935	934	933	932	931	930	929	928	927	926	925	924	923	922	921	920	919	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	9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Trade Name and Model		Chassis Price	Make and Model	N. A. C. C.	Horsepower	Valve Arrangement	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	Make	GEARSET		REAR AXLE		TIRES, WHEELS, RIMS		Chassis Weight										
																			Location	Speeds	Universal (Make)	Springs (Make)	Final Drive	Make		Type	Total Gear Ratio in High	Total Gear Ratio in Low	Steering Gear (Make)	Front	Rear	Wheels (Make)	Rim Equipment		
1 1/2 Ton—Cont'd																																			
D-Old AA	2450	H-Sp 7000	Wei	19.6 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	5000	168.70
Douglas G-1 1/2	1750	Buda WU	Wei	22.5 x 22.5	H	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3725	126.65
Erie E-1 1/2	1750	Buda WU	Wei	22.5 x 22.5	H	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3725	126.65
Federal TE	2175	Buda CTU	Cont C4	19.6 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	4400	144.75
Forester C	2800	Buda CTU	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	4400	144.75
Front Drive C	3100	Buda CTU	Buda ITU	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	4400	144.75
Gent M	2800	Buda CTU	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	4400	144.75
Giant 15A	2250	Dodge	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Graham Brothers	1325	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Gramm-Pioneer 15	1900	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Gramm-Pioneer 65	2500	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
G. W. Farm Spec.	1850	Wei	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Higraide B20	3250	Hink HAA	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Hurlburt	2040	Buda CTU	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Huron-Erie	2040	Buda CTU	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Independent G (Iowa)	2385	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Independent F (Ohio)	1850	Wau BUX	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Indiana 12	2800	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
International 31	2700	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Kalamazoo G-1	1975	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Kalamazoo G-2	1985	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Kelly-Springfield K31	2800	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Kelly-Springfield K34	2700	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Kiesel General Utility	1975	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Kleiber A	1985	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Koehler D	2400	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Larabee U	2400	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Larabee W	2400	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Macfarl	3000	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Macfarl AB-1 1/2	3000	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Master JW	2300	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Master JW	2300	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Master JW	2300	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Master JW	2300	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Master JW	2300	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	23	3200	120
Master JW	2300	Cont N	Cont N	22.5 x 22.5	L	GO	Ow	PT	PT	FS	FS	Phar	Dup	BB	DP	Bos	...	W	U	4	Spic	SP	SP	W	Timk	1 1/2 FI	8.25	23.1	21	Ros	34x5	34x5	2		

[illegible]

Trade Name and Model	Chassis Price	ENGINE DETAILS										GEARSET			REAR AXLE			Steering Gear (Make)	TIRES, WHEELS, RIMS		Chassis Weight	Wheelbase	Pr. Cent of Weight on Rear Wheel								
		Bore and Stroke	N. A. C. C.	Horsepower	Valve Arrangement	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	Make		Location	Speeds				Universal (Make)	Springs (Make)	Final Drive	Make	Type	Total Gear Reduction in High	Total Gear Reduction in Low	
																															Front	Rear
2 Ton—Conv'd																															
Superior E.	2600	Cont C2	4 1/2 x 5 1/2	27.2	L	A	Can	C	ZZT	FS	Shel	Wau	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	3600	144 75	44
Titan 2	1895	Cont N4	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4400	156 70	44
*Traffic 4000C	1895	Cont N4	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	3175	132 85	44
*Transport 35	1895	Cont N4	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5100	146 75	44
Triangle C.	2285	Buda ITU	4 1/2 x 5 1/2	22.5	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4200	147 60	44
*Triumph 2	2285	Buda CTU	4 1/2 x 5 1/2	22.5	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5000	144 70	44
Triumph 2	2285	Buda CTU	4 1/2 x 5 1/2	22.5	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4800	150 80	44
Twin City	2750	Buda ITU	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4500	140 72	44
*Ultimate AJ	3200	Buda HTU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4500	156 72	44
*Ultimate AJL	3250	Buda HTU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4700	142 65	44
Vim 22	3150	Her C2	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4150	144 70	44
*Walker-Johnson A	3750	Buda WU	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5500	144 70	44
walker N	3750	Buda WU	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4500	157 70	44
*Wichita 20	2400	Wau BX	4 1/2 x 5 1/2	22.5	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4400	144 80	44
Wichita M.	3200	Wau BX	4 1/2 x 5 1/2	22.5	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	3200	136 70	44
Wisconsin (Loganville)	1450	HSP	4 1/2 x 5 1/2	19.6	H	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5000	144 70	44
Witt Will P.	2750	Cont C4	4 1/2 x 5 1/2	27.2	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4300	148 72	44
Wolverine J2	2640	Cont J4	4 1/2 x 5 1/2	22.5	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4500	144 75	44
Young 6	2750	Cont K-4	4 1/2 x 5 1/2	27.2	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4500	144 75	44
2 1/2 Ton																															
Aaron H.	2600	Wau CU	4 1/2 x 5 1/2	30.6	L	A	Can	C	ZZT	FS	Shel	Wau	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5400	150 70	44
Ace 2 1/2	3580	Buda HU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5630	156 80	44
Ame 60	3580	Wau HU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4830	148 49	44
American	3250	Wau	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5000	158 70	44
Apex E.	2695	Buda HTU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4500	150 70	44
Armstrong HW	3200	Buda HTU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4900	148 70	44
Armlender HW	3200	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4900	148 70	44
Armlender HW	3200	Bud HU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4900	150 70	44
Auco A.	3975	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5520	171 74	5
Atterbury 7CX LWB	3175	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5360	153 74	5
Atterbury 7CX STD	3175	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4750	152 75	44
Available 2 1/2	2850	Her CU3	4 1/2 x 5 1/2	25.6	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4200	156 70	44
Bell O.	2600	Cont C2	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5260	153 70	44
*Bessemmer 2 1/2	2990	Buda HTU	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5200	156 85	44
Bridgport 2 1/2 B.	2250	Cont K4	4 1/2 x 5 1/2	27.2	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5100	156 85	44
Brinton D.	3400	Wau CU-3	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5400	163 73	44
Brookway K5	3700	Wau CU-3	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5400	163 73	44
Buffalo Model 6	4250	Her CU3	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	5445	165 70	44
Capitol K2 1/2	3450	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4400	148 40	44
Chicago 62 1/2	3250	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4400	148 40	44
Clydesdale 65X	3250	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W	Timk	Flot	7.75	40.3	Ros	36x4	36x7	Sch	22	21	23	23	4400	148 40	44
Clydesdale 65X	3250	Cont C4	4 1/2 x 5 1/2	28.9	L	A	Mod	C	ZZT	FS	Shel	Pier	Full	DD	Eis	W															

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3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278	3279	3280	3281	3282	3283	3284	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322	3323	3324	3325	3326	3327	3328	3329	3330	3331	3332	3333	3334	3335	3336	3337	3338	3339	3340	3341	3342	3343	3344	3345	3346	3347	3348	3349	3350	3351	3352	3353	3354	3355	3356	3357	3358	3359	3360	3361	3362	3363	3364	3365	3366	3367	3368	3369	3370	3371	3372	3373	3374	3375	3376	3377	3378	3379	3380	3381	3382	3383	3384	3385	3386	3387	3388	3389	3390	3391	3392	3393	3394	3395	3396	3397	3398	3399	3400	3401	3402	3403	3404	3405	3406	3407	3408	3409	3410	3411	3412	3413	3414	3415	3416	3417	3418	3419	3420	3421	3422	3423	3424	3425	3426	3427	3428	3429	3430	3431	3432	3433	3434	3435	3436	3437	3438	3439	3440	3441	3442	3443	3444	3445	3446	3447	3448	3449	3450	3451	3452	3453	3454	3455	3456	3457	3458	3459	3460	3461	3462	3463	3464	3465	3466	3467	3468	3469	3470	3471	3472	3473	3474	3475	3476	3477	3478	3479	3480	3481	3482	3483	3484	3485	3486	3487	3488	3489	3490	3491	3492	3493	3494	3495	3496	3497	3498	3499	3500	3501	3502	3503	3504	3505	3506	3507	3508	3509	3510	3511	3512	3513	3514	3515	3516	3517	3518	3519	3520	3521	3522	3523	3524	3525	3526	3527	3528	3529	3530	3531	3532	3533	3534	3535	3536	3537	3538	3539	3540	3541	3542	3543	3544	3545	3546	3547	3548	3549	3550	3551	3552	3553	3554	3555	3556	3557	3558	3559	3560	3561	3562	3563	3564	3565	3566	3567	3568	3569	3570	3571	3572	3573	3574	3575	3576	3577	3578	3579	3580	3581	3582	3583	3584	3585	3586	3587	3588	3589	3590	3591	3592	3593	3594	3595	3596	3597	3598	3599	3600	3601	3602	3603	3604	3605	3606	3607	3608	3609	3610	3611	3612	3613	3614	3615	3616	3617	3618	3619	3620	3621	3622	3623	3624	3625	3626	3627	3628	3629	3630	3631	3632	3633	3634	3635	3636	3637	3638	3639	3640	3641	3642	3643	3644	3645	3646	3647	3648	3649	3650	3651	3652	3653	3654	3655	3656	3657	3658	3659	3660	3661	3662	3663	3664	3665	3666	3667	3668	3669	3670	3671	3672	3673	3674	3675	3676	3677	3678	3679	3680	3681	3682	3683	3684	3685	3686	3687	3688	3689	3690	3691	3692	3693	3694	3695	3696	3697	3698	3699	3700	3701	3702	3703	3704	3705	3706	3707	3708	3709	3710	3711	3712	3713	3714	3715	3716	3717	3718	3719	3720	3721	3722	3723	3724	3725	3726	3727	3728	3729	3730	3731	3732	3733	3734	3735	3736	3737	3738	3739	3740	3741	3742	3743	3744	3745	3746	3747	3748	3749	3750	3751	3752	3753	3754	3755	3756	3757	3758	3759	3760	3761	3762	3763	3764	3765	3766	3767	3768	3769	3770	3771	3772	3773	3774	3775	3776	3777	3778	3779	3780	3781	3782	3783	3784	3785	3786	3787	3788	3789	3790	3791	3792	3793	3794	3795	3796	3797	3798	3799	3800	3801	3802	3803	3804	3805	3806	3807	3808	3809	3810	3811	3812	3813	3814	3815	3816	3817	3818	3819	3820	3821	3822	3823	3824	3825	3826	3827	3828	3829	3830	3831	3832	3833	3834	3835	3836	3837	3838	3839	3840	3841	3842	3843	3844	3845	3846	3847	3848	3849	3850	3851	3852	3853	3854	3855	3856	3857	3858	3859	3860	3861	3862	3863	3864	3865	3866	3867	3868	3869	3870	3871	3872	3873	3874	3875	3876	3877	3878	3879	3880	3881	3882	3883	3884	3885	3886	3887	3888	3889	3890	3891	3892	3893	3894	3895	3896	3897	3898	3899	3900	3901	3902	3903	3904	3905	3906	3907	3908	3909	3910	3911	3912	3913	3914	3915	3916	3917	3918	3919	3920	3921	3922	3923	3924	3925	3926	3927	3928	3929	3930	3931	3932	3933	3934	3935	3936	3937	3938	3939	3940	3941	3942	3943	3944	3945	3946	3947	3948	3949	3950	3951	3952	3953	3954	3955	3956	3957	3958	3959	3960	3961	3962	3963	3964	3965	3966	3967	3968	3969	3970	3971	3972	3973	3974	3975	3976	3977	3978	3979	3980	3981	3982	3983	3984	3985	3986	3987	3988	3989	3990	3991	3992	3993	3994	3995	3996	3997	3998	3999	4000	4001	4002	4003	4004	4005	4006	4007	4008	4009	4010	4011	4012	4013	4014	4015	4016	4017	4018	4019	4020	4021	4022	4023	4024	4025	4026	4027	4028	4029	4030	4031	4032	4033	4034	4035	4036	4037	4038	4039	4040	4041	4042	4043	4044	4045	4046	4047	4048	4049	4050	4051	4052	4053	4054	4055	4056	4057	4058	4059	4060	4061	4062	4063	4064	4065	4066	4067	4068	4069	4070	4071	4072	4073	4074	4075	4076	4077	4078	4079	4080	4081	4082	4083	4084	4085	4086	4087	4088	4089	4090	4091	4092	4093	4094	4095	4096	4097	4098	4099	4100	4101	4102	4103	4104	4105	4106	4107	4108	4109	4110	4111	4112	4113	4114	4115	4116	4117	4118	4119	4120	4121	4122	4123	4124	4125	4126	4127	4128	4129	4130	4131	4132	4133	4134	4135	4136	4137	4138	4139	4140	4141	4142	4143	4144	4145	4146	4147	4148	4149	4150	4151	4152	4153	4154	4155	4156	4157	4158	4159	4160	4161	4162	4163	4164	4165	4166	4167	4168	4169	4170	4171	4172	4173	4174	4175	4176	4177	4178	4179	4180	4181	4182	4183	4184	4185	4186	4187	4188	4189	4190	4191	4192	4193	4194	4195	4196	4197	4198	4199	4200	4201	4202	4203	4204	4205	4206	4207	4208	4209	4210	4211	4212	4213	4214	4215	4216	4217	4218	4219	4220	4221	4222	4223	4224	4225	4226	4227	4228	4229	4230	4231	4232	4233	4234	4235	4236	4237	4238	4239	4240	4241	4242	4243	4244	4245	4246	4247	4248	4249	4250	4251	4252	4253	4254	4255	4256	4257	4258	4259	4260	4261	4262	4263	4264	4265	4266	4267	4268	4269	4270	4271	4272	4273	4274	4275	4276	4277	4278	4279	4280	4281	4282	4283	4284	4285	4286	4287	4288	4289	4290	4291	4292	4293	4294	4295	4296	4297	4298	4299	4300	4301	4302	4303	4304	4305	4306	4307	4308	4309	4310	4311	4312	4313	4314	4315	4316	4317	4318	4319	4320	4321	4322	4323	4324	4325	4326	4327	4328	4329	4330	4331	4332	4333	4334	4335	4336	4337	4338	4339	4340	4341	4342	4343	4344	4345	4346	4347	4348	4349	4350	4351	4352	4353	4354	4355	4356	4357	4358	4359	4360	4361	4362	4363	4364	4365	4366	4367	4368	4369	4370	4371	4372	4373	4374	4375	4376	4377	4378	4379	4380	4381	4382	4383	4384	4385	4386	4387	4388	4389	4390	4391	4392	4393	4394	4395	4396	4397	4398	4399	4400	4401	4402	4403	4404	4405	4406	4407	4408	4409	4410	4411	4412	4413	4414	4415	4416	4417	4418	4419	4420	4421	4422	4423	4424	4425	4426	4427	4428	4429	4430	4431	4432	4433	4434	4435	4436	4437	4438	4439	4440	4441	4442	4443	4444	4445	4446	4447	4448	4449	4450	4451	4452	4453	4454	4455	4456	4457	4458	4459	4460	4461	4462	4463	4464	4465	4466	4467	4468	4469	4470	4471	4472	4473	4474	4475	4476	4477	4478	4479	4480	4481	4482	4483	4484	4485	4486	4487	4488	4489	4490	4491	4492	4493	4494	4495	4496	4497	4498	4499	4500	4501	4502	4503	4504	4505	4506	4507	4508	4509	4510	4511	4512	4513	4514	4515	4516	4517	4518	4519	4520	4521	4522	4523	4524	4525	4526	4527	4528	4529	453
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Trade Name and Model	Chassis Price	ENGINE DETAILS										GEAR SET		REAR AXLE		TIRES, WHEELS, RIMS		Chassis Weight	Wheelbase	P. Cent of Wheelbase on Rear Wheel											
		Make and Model	N. A. C. C. Horsepower	Valve Arrangement	How Cooled	Radiator (Make)	Radiator (Type)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Clutch (Make)	Clutch (Type)	Ignition System	Engine Starter	Make	Type				Total Gear Ratio		Steering Gear	Pneumatic Tires		Rim Equipment					
																					Location	Speeds		Universal (Make)	Spring (Make)		Final Drive	Make	Front	Rear	Wheels (Make)
5 Ton—Con'd																															
Buda ATU	5190	4 1/2 x 6 1/2	36.1	L	Chic	PT	FS	Mas	V	Pier	B-Li	DP	Eis	Opt	W-Li	Flot	A	4	Spie	Det	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	9800 194 72
Wis RAU	4850	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8250 160 80
Cont B2	5000	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Con	B-Li	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8000 175 88
Nelson & LeMoon G5	5000	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Con	B-Li	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8600 175 88
Old Reliable D.	5000	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Packard EF	4850	5 x 5 1/2	40	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	5 x 6	40	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Parker M20	4850	5 x 6	40	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Pierce Arrow R10	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Rainier R-17	5100	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Rowe FW6	5500	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Sanford W50	4400	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Schacht	4900	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Schwartz MS	4900	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Schwartz M	4900	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Schwartz M1	4900	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Selden Unit 90	4950	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Service 102	4400	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Signal R	4400	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Standard 5K	4400	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Sterling 5 Worm	4950	5 x 6 1/2	40	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Sterling 5 Chain	5500	5 x 6 1/2	40	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Super Truck 100	4600	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Super Truck 100	4600	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Tiffin TW	4300	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Titan 6	5250	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Transport 75	3485	4 1/2 x 6	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
Ultimate D	4700	4 1/2 x 6	36.1	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
United 5	5000	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
U.S. T	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6	40x12	Wal	Fir	8400 180 80
W-Li	4850	4 1/2 x 6 1/2	32.4	L	Chic	PT	FS	Strm	V	Mon	O-B	DD	Eis	W	W-Li	Flot	A	4	Spie	Tut	W-Li	Flot	Opt	11.6	10.4	Ros	36x6				

ELECTRIC COMMERCIAL CARS

E. C. M.	Name and Model Number	Carrying Capacity	Chassis Weight	Chassis Price	Maximum Speed	Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
	Atlantic 1C.....	2000	2770	.....	12	Opt	.....	G-E	G-E	4	C	Timk	S-El	34x4	36x4	Ross	103	65
	Atlantic 2C.....	4000	3590	.....	11	Opt	.....	G-E	G-E	4	C	Timk	S-El	34x4	36x3 1/2	Ross	115	65
	Atlantic 3C.....	7000	5220	.....	10	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x5	40x5 1/2	Ross	135	65
	Atlantic 5C.....	10000	6230	.....	9	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x6	40x5 1/2	Ross	144	65
	Atlantic 6C.....	13000	6940	.....	8	Opt	.....	G-E	G-E	5	C	Timk	S-El	36x6	40x6	Ross	156	65
	C-T BR2B.....	1000	2200	1600	14	Opt	55	G-E	Own	4	C-T	Flot	Shel	36x3 1/2	36x4 1/2	W	100	65
	C-T BR 2.....	2000	2400	2150	14	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x3 1/2	36x4 1/2	W	101	60
	C-T BR 2A.....	1500	2200	1975	14	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x3 1/2	36x4 1/2	W	91 1/2	60
	C-T BR 4.....	4000	4000	2575	12	Opt	60	G-E	Own	4	C-T	Flot	Shel	36x4	36x4 1/2	W	116	60
	C-T AR 7.....	7000	5000	3550	10	Opt	50	G-E	Own	4	I	Dead	Shel	36x5	36x5 1/2	W	126	60
	C-T AK 7.....	7000	5800	3850	11	Opt	50	G-E	Own	4	I	Dead	Shel	36x5	36x5 1/2	W	122	55
	C-T AK 10.....	10000	6500	3960	10	Opt	50	G-E	Own	4	I	Dead	Shel	36x7	36x5 1/2	W	132	55
	*Kelland B.....	1500	1950	.....	15	Opt	50	G-E	G-E	4	R	Flot	Mer	34x3	34x3 1/2	Ross	102	60
	Lansden BG 3/4.....	1400	1600	1500	15	Opt	50	G-E	G-E	4	R	Flot	SP	32x4 1/2	32x4 1/2	Lav	90	50
	Lansden MC 1.....	2900	1850	1200	12	Opt	50	G-E	G-E	4	C	D	SP	36x3	36x3 1/2	KH	108	60
	Lansden MD 2.....	4400	2250	1100	11	Opt	50	G-E	G-E	4	C	D	SP	36x4	36x3 1/2	KH	120	60
	Lansden ME 3 1/2.....	5700	2950	1000	10	Opt	45	G-E	G-E	4	C	D	SP	36x5	36x4 1/2	KH	133	60
	Lansden MF 5.....	7500	3350	900	9	Opt	40	G-E	G-E	4	C	D	SP	36x6	36x5 1/2	KH	146	60
	Lansden MG 6.....	8900	.....	700	7	Opt	35	G-E	G-E	4	C	D	SP	36x7	36x5 1/2	KH	156	60
	Walker Model 22.....	2000	3700	.....	14	Opt	60	West	West	5	O	Own	Math	34x3 1/2	36x4	Ross	101	66
	Walker Model 42.....	4000	2500	.....	13	Opt	60	West	West	5	O	Own	Math	36x4	36x5	Ross	114	66
	Walker M.....	1000	2300	.....	15	Opt	60	West	West	5	O	Own	Math	34x3	36x3 1/2	Ross	94	66
	Walker N.....	10000	6300	.....	10	Opt	50	West	West	5	O	Own	Math	36x6	38x6	Ross	141	66
	Walker P.....	7000	5300	.....	11	Opt	50	West	West	5	O	Own	Math	36x5	38x5	Ross	131	66
	Walter EN.....	4000	4400	2900	15	Opt	50	G-E	G-E	4	O	Dead	.....	36x4	36x7	Gem	114	60
	Walter EL.....	7000	4550	3600	13 1/2	Opt	50	G-E	G-E	4	O	Dead	.....	36x5	36x4	Gem	130	60
	*Walter ES.....	10000	7200	4350	12	Opt	50	G-E	G-E	4	O	Dead	.....	36x6	40x6	Ros	150	60
	Ward WS 2.....	1650	.....	1300	13	Opt	45	G-E	Own	4	W	Shel	Shel	32x3	32x3 1/2	Own	88	60
	Ward WA.....	2860	.....	1200	12	Opt	45	G-E	Own	4	W	Shel	Shel	32x3 1/2	34x4	Own	90	60
	*Ward WA 2.....	2470	.....	1200	12	Opt	45	G-E	Own	4	W	Shel	Shel	32x3 1/2	34x4	Own	90	60
	*Ward WB.....	3850	.....	10.5	10.5	Opt	40	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	60
	*Ward WB 2.....	3350	.....	10.5	10.5	Opt	40	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	60
	*Ward WD.....	4875	.....	9	9	Opt	35	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	60
	*Ward WD 2.....	4350	.....	9	9	Opt	35	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	60
	Ward F.....	7200	.....	8	8	Opt	30	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
	Ward F 2.....	6450	.....	8	8	Opt	30	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
	*Ward WH.....	9400	.....	7	7	Opt	26	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	144	70
	Ward WH 2.....	8200	.....	7	7	Opt	26	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	144	70

Manufacturers and Models Included in Specifications on Preceding Pages

Acason—1/4, 1, 1 1/2, 2 1/2, 3 1/2, 5—Acason Motor Truck Co., Wyandotte, Mich.
 Ace—1 1/2, 2 1/2—American Motor Truck Co., Newark, Ohio.
 Acme—1, 1 1/2, 2 3/4, 4 1/2, 6 1/4—Acme Motor Truck Co., Cadillac Mich.
 Ajax—1 1/2—Ajax Motors Corp., Boston, Mass.
 American—2 1/2, 4—American Motor Truck & Tractor Co., Portland, Conn.
 Apex—1, 1 1/2, 2 1/2, 3 1/2—Hamilton Motor Co., Grand Haven, Mich.
 Armleder—1, 1 1/2, 2 1/2, 3 1/2—O. Armleder Co., Cincinnati, Ohio.
 Atco—1 1/2, 2 1/2—American Truck & Trailer Corp., Kankakee, Ill.
 Atlantic—1, 2, 3, 5, 6—Atlantic Electric Vehicle Co., Newark, N. J.
 Atlas—1—Atlas Truck Corp., York, Pa.
 Atterbury—1 1/2, 2 1/2, 3 1/2, 5—Atterbury Motor Car Co., Buffalo, N. Y.
 Autocar—1 1/2, 2, 5—Autocar Co., Ardmore, Pa.
 Available—1 1/2, 2, 2 1/2, 3 1/2, 5, 7—Available Truck Co., Chicago, Ill.
 Avery—1—Avery Company, Peoria, Ill.
 Bartlett—7—Bartlett Truck Co., Chicago, Ill.
 Bell—1, 1 1/2, 2 1/2—Iowa Motor Truck Co., Ottumwa, Ia.
 Bessemer—1, 1 1/2, 2 1/2, 4—Bessemer Motor Truck Co., Grove City, Pa.
 Birch—1—Birch Motor Cars, Chicago, Ill.
 Bridgeport—1 1/2, 2 1/2, 3 1/2—Bridgeport Motor Truck Co., Bridgeport, Conn.
 Brinton—1 1/2, 2 1/2—Brinton Motor Truck Co., Philadelphia, Pa.
 Brockway—1 1/2, 2 1/2, 3 1/2, 5—Brockway Motor Truck Co., Cortland, N. Y.
 Buffalo—1 1/2, 2 1/2 T—Buffalo Truck & Tractor Corp., Clarence, N. Y.
 C. T.—1, 1 1/2, 2, 3 1/2, 5—Commercial Truck Co., Philadelphia, Pa.
 Capitol—1 1/2, 2 1/2, 3 1/2—Capitol Motors Corp., Fall River, Mass.
 Casco—1—Casco Motors, Inc., Portland, Maine.
 Case—2—J. I. Case Plow Works Co., Racine, Wis.
 Chevrolet—1/4, 1—Chevrolet Motor Co. of Mich., Flint, Mich.
 Chicago—1 1/2, 2 1/2, 3 1/2, 5—Chicago Motor Truck, Inc., Chicago, Ill.
 Climber—1 1/2—Climber Motor Corp., Little Rock, Ark.
 Clydesdale—1/4, 1, 1 1/2, 2 1/2, 3 1/2, 5—Clydesdale Motor Truck Co., Clyde, Ohio.
 Collier—1, 1 1/2, 2, 2 1/2—Collier Motor Truck Co., Bellevue, Ohio.
 Columbia—1 1/2, 2 1/2—Columbia Motor Truck & Trailer Co., Pontiac, Mich.
 Commerce—1 1/4, 1 1/2, 2, 2 1/2—Commerce Motor Truck Co., Detroit, Mich.
 Concord—1 1/2, 2, 2 1/2, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
 Corbitt—1, 1 1/2, 2, 2 1/2, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
 Cyclone—1 1/4—The Cyclone Motor Corp., Greenville, S. C.
 Dart—1 1/2, 2 1/2, 3 1/2—Dart Truck & Tractor Corp., Waterloo, Ia.
 Day-Elder—1, 1 1/2, 2, 2 1/2, 3 1/2, 5—Day-Elder Motors Corp., Newark, N. J.
 Dearborn—1, 1 1/2, 2—Dearborn Truck Co., Chicago, Ill.
 Defiance—1, 1 1/2, 2—Defiance Motor Truck Co., Defiance, Ohio.
 Denby—1, 1 1/2, 2, 3, 4, 5—Denby Motor Truck Co., Detroit, Mich.
 Dependable—1, 1 1/2, 2, 2 1/2, 3 1/2—Dependable Truck & Tractor Co., East St. Louis, Ill.
 Diamond T—1 1/4, 1 1/2, 2, 3 1/2, 5—Diamond T Motor Car Co., Chicago, Ill.

Diehl—1, 1 1/2—Diehl Motor Truck Works, Philadelphia, Pa.
 Dixon—Dixon Motor Truck Co., Altoona, Pa.
 Doane—2 1/2, 3 1/2, 6—Doane Motor Truck Co., San Francisco, Cal.
 Dodge—1 1/2—Dodge Bros., Detroit, Mich.
 D-Olt—1 1/2, 2 1/2, 5—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
 Dorris—2, 3 1/2—Dorris Motor Car Co., St. Louis, Mo.
 Dort—1/2—Dort Motor Car Co., Flint, Mich.
 Double Drive—4—Double Drive Truck Co., Chicago, Ill.
 Douglas—1 1/2, 2, 3—Douglas Motors Corp., Omaha, Neb.
 Drake—2—Drake Motor & Tire Mfg. Corp., Knoxville, Tenn.
 Duplex—2, 3 1/2—Duplex Truck Co., Lansing, Mich.
 Duty—2—Duty Motor Co., Elgin, Ill.
 Eagle—2—Eagle Motor Truck Corp., St. Louis, Mo.
 Earl—1—Earl Motors, Inc., Jackson, Mich.
 Erie—1 1/2, 2 1/2—Erie Motor Truck Mfg. Co., Erie, Pa.
 Eugol—1—Eugol Motor Truck Co., Kenosha, Wis.
 F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
 Facto—2 1/2—Facto Motor Trucks, Springfield, Mass.
 Fageol—2, 3, 4, 5—Fageol Motors Co., Oakland, Cal.
 Fargo—2—Fargo Motor Truck Co., Chicago, Ill.
 Federal—1, 1 1/2, 2, 3 1/2, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
 Ford—1—Ford Motor Co., Highland Park, Mich.
 Forschler—1, 1 1/2, 2, 3—Forschler Motor Truck Mfg. Co., New Orleans, La.
 Front Drive—1 1/2—Double Drive Truck Co., Chicago, Ill.
 Fulton—1, 2, T.T.—Fulton Motors Corp., Farmingdale, N. Y.
 G. M. C.—1, 2, 3 1/2, 5—General Motors Truck Co., Pontiac, Mich.
 G. W. W.—1 1/2—Wilson Truck Mfg. Co., Henderson, Ia.
 Garford—1/4, 1 1/2, 2, 3 1/2, 5, 7 1/2—Garford Motor Truck Co., Lima, O.
 Gary—1, 2, 2 1/2, 3 1/2, 5—Gary Motor Corp., Gary, Ind.
 Gersix—1 1/2, 2 1/2, 3—Gersix Mfg. Co., Seattle, Wash.
 Giant—1 1/2, 2 1/2, 3 1/2, 5—Giant Truck Corp., Chicago Heights, Ill.
 Graham—1, 1 1/2—Graham Brothers, Evansville, Ind.
 Gramm-Bernstein—1, 1 1/2, 2, 3, 3 1/2, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
 Hal-Fur—2, 3 1/2—Hal-Fur Motor Truck Co., Cleveland, Ohio.
 Hall—2 1/2, 3 1/2, 5, 7—Lewis-Hall Motors Corp., Detroit, Mich.
 Harvey—2, 2 1/2, 3 1/2—Harvey Motor Truck Co., Harvey, Ill.
 Hendrickson—2 1/2, 3 1/2, 5—Hendrickson Motor Truck Co., Chicago, Ill.
 Highway-Knight—4, 5—Highway Truck Corp., Chicago, Ill.
 Higrade—1, 1 1/2—Higrade Motors Co., Harbor Springs, Mich.
 H. R. L.—1/4, 1 1/2, 2 1/2—H. R. L. Motor Co., Seattle, Wash.
 Hurlburt—1 1/2, 2 1/2, 3 1/2, 5—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
 Huron—1 1/2, 2 1/2—Huron Truck Co., Bad Axe, Mich.
 Independent—1 1/2, 2 1/2, 3 1/2—Independent Motor Co., Youngstown, Ohio.
 Independent—1, 1 1/2, 2 1/2—Independent Motor Truck Co., Inc., Danversport, Ia.
 Indiana—1 1/2, 2, 2 1/2, 3 1/2, 5—Indiana Truck Corp., Marion, Ind.
 International—1, 1 1/2, 2, 3, 5—International Harvester Co., Chicago, Ill.
 Jackson—3 1/2—Jackson Motors Corp., Jackson, Mich.
 Kalamazoo—1 1/2, 2 1/2, 3 1/2—Kalamazoo Motor Corp., Kalamazoo, Mich.
 Kearns—1/4, 1 1/2—Kearns-Dughie Motors Co., Danville, Pa.
 Kelland—Kelland Motor Car Co., Newark, N. J.

- Kelly-Springfield—1½, 2½, 3½, 5, 6—Kelly-Springfield Motor Truck Co., Springfield, O.
- Keystone—2—Keystone Motor Truck Corp., Philadelphia, Pa.
- Kimball—2, 2½, 3, 4, 5—Kimball Motor Truck Co., Los Angeles, Cal.
- Kissel—1, 1½, 2½, 4, 5—Kissel Motor Car Co., Hartford, Wis.
- Kleiber—1, 1½, 2, 2½, 3½, 5—Kleiber & Co., Inc., San Francisco, Cal.
- Koehler—1½, 2½, 3½, T.T.—H. J. Koehler Motors Corp., Bloomfield, N. J.
- Lange—2, 2½—Lange Motor Truck Co., Pittsburgh, Pa.
- Lansden—3½, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
- Larrabee-Deyo—1½, 2½, 3½, 5—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
- Lombard—T.T.—Lombard Auto Tractor Truck Corp., New York, N. Y.
- Luedinghaus—1, 1½, 2—Luedinghaus-Espenschled Wagon Co., St. Louis, Mo.
- Luverne—2, 3—Luverne Motor Truck Co., Scranton, Pa.
- Maccar—2½, 3, 4, 5, 6—Maccar Truck Co., Scranton, Pa.
- MacDonald—7—MacDonald Truck & Tractor Co., San Francisco, Cal.
- Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—International Motor Co., New York, N. Y.
- Master—1½, 2½, 3½, 5, T.T.—Master Trucks, Inc., Chicago, Ill.
- Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
- Menominee—1, 1½, 2, 3½, 5—Menominee Motor Truck Co., Menominee, Mich.
- Moline—1½—Moline Plow Co., Moline, Ill.
- Moreland—1, 1½, 2½, 4, 5—Moreland Motor Truck Co., Los Angeles, Cal.
- Napoleon—¾, 1, 1½—Napoleon Motors Co., Traverse City, Mich.
- Nash—1, 2—Nash Motors Co., Kenosha, Wis.
- Nelson-LeMoon—1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
- Netco—2, 2½—New England Truck Co., Fitchburg, Mass.
- Niles—2—Niles Motor Truck Co., Pittsburgh, Pa.
- Noble—1½, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.
- Northway—2, 3½—Northway Motors Co., Natick, Mass.
- Norwalk—1, 1½—Norwalk Motor Car Co., Martinburg, W. Va.
- O. K.—1½, 2½, 3½—Oklahoma Auto Mfg. Co., North Muskogee, Okla.
- Ogden—¾, 1½, 2½, 3½, 5—Ogden Motor Truck Co., Chicago, Ill.
- Old Reliable—1½, 2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
- Oldsmobile—1—Olds Motor Works, Lansing, Mich.
- Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
- Oshkosh—2, 2½—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
- Packard—2, 3, 5—Packard Motor Car Co., Detroit, Mich.
- Palge—1½, 2, 3½, 5—Palge-Detroit Motor Car Co., Detroit, Mich.
- Parker—1, 2½, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
- Patriot—1, 2, 3—Patriot Mfg. Co., Lincoln, Neb.
- Penn—2—Penn Motors Corp., 1714 N. Broad St., Philadelphia, Pa.
- Pierce-Arrow—2, 3½, 5—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
- Pioneer—1—Pioneer Truck Co., Chicago, Ill.
- Pittsburgher—2½, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
- Power—1½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
- Premocar—1½—Preston Motors Corp., Birmingham, Ala.
- Ranier—¾, 1, 1½, 2, 2½, 3½, 5—Ranier Motor Corp., New York, N. Y.
- Ranger—2—Southern Motor Mfg. Ass'n, Ltd., Houston, Tex.
- Reliance—1½, 2½—Reliance Motor Truck Co., Appleton, Wis.
- Reo—1½—Reo Motor Car Co., Lansing, Mich.
- Republic—¾, 1, 1½, 2½, 3½—Republic Motor Truck Co., Inc., Alma, Mich.
- Riker—3, 4—Locomobile Co. of America, Bridgeport, Conn.
- Rowe—1½, 2, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.
- Ruggles—1½, 2—Ruggles Motor Truck Co., Saginaw, Mich.
- Rumely—1½—Advance-Rumely Thresher Co., Inc., La Porte, Ind.
- Samson—¾, 1½—Samson Tractor Co., Janesville, Wis.
- Sanford—2½, 3½, 5—Sanford Motor Truck Co., Syracuse, N. Y.
- Schacht—2, 3, 4, 5, 7—G. A. Schacht Motor Truck Co., Cincinnati, O.
- Schwartz—1, 2, 3, 5—Schwartz Motor Truck Co., Reading, Pa.
- Selden—1½, 2½, 3½, 5—Selden Truck Corp., Rochester, N. Y.
- Service—¾, 1½, 1½, 2, 2½, 3, 3½, 6—Service Motor Truck Co., Wabash, Ind.
- Signal—1, 1½, 2½, 3½, 5—Signal Truck Corp., Detroit, Mich.
- Southern—1, 1½, 2—Southern Truck & Car Corp., Greenboro, N. C.
- Standard—1½, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
- Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
- Stewart—¾, 1, 1½, 2, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
- Stoughton—¾, 1, 1½, 2, 3—Stoughton Wagon Co., Stoughton, N. Y.
- Super Truck—2½, 3½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
- Superior—1, 2—Superior Motor Truck Co., Atlanta, Ga.
- Tiffin—1½, 2½, 3½, 5, 6—Tiffin Wagon Co., Tiffin, Ohio.
- Titan—2, 3½, 5, 6—Titan Truck Co., Milwaukee, Wis.
- Thomart Speed—1½—Thomart Motor Co., Kent, Ohio.
- Tower—1½, 2½, 3½—Tower Motor Truck Co., Greenville, Mich.
- Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
- Transport—1, 1½, 2, 3, 3½, 5—Transport Truck Co., Mt. Pleasant, Mich.
- Traylor—1½, 2, 3, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
- Triangle—¾, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
- Triumph—1½, 2, 2½—Triumph Truck & Tractor Co., Kansas City, Mo.
- Twin City—2, 3½—Twin City Company, Minneapolis, Minn.
- Ultimate—1½, 2, 2½, 3, 5—Vreeland Motor Co., Inc., Newark, N. J.
- Union—2½, 4, 6—Union Motor Truck Co., Bay City, Mich.
- United—1½, 2½, 3½, 5—United Motors Co., Grand Rapids, Mich.
- Ursus—1, 1½, 2½, 3½—Ursus Motor Co., Inc., Chicago, Ill.
- U. S.—1½, 1½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
- Velle—1½—Velle Motors Corp., Moline, Ill.
- Vim—¾, 1, 2, 3—Vim Motor Truck Co., Philadelphia, Pa.
- Vulcan—2½—Vulcan Mfg. Co., Seattle, Wash.
- Walker—¾, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
- Walker-Johnson—2, 2½—Walker-Johnson Truck Co., Woburn, Mass.
- Walter—2, 2½, 3½, 5, 7—T. T. Walter Truck Co., New York, N. Y.
- Ward—¾, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
- Ward La France—2½, 3½, 5—Ward La France Truck Co., Inc., Elmira, N. Y.
- Watson—¾, 3½, T.T.—Watson Wagon Co., Canastota, N. Y.
- White—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
- White Hickory—1, 1½, 2½—White Hickory Motor Corp., Atlanta, Ga.
- Wichita—1, 2, 3, 3½, 5½—Wichita Falls Motors Co., Wichita Falls, Tex.
- Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
- Wilson—1½, 2½, 3½, 5—J. C. Wilson Co., Detroit, Mich.
- Winther—1, 1½, 2, 2½, 3½, 5, 7—Winther Motor Truck Co., Kenosha, Wis.
- Wisconsin (Loganville)—2, 2½—Wisconsin Truck Co., Loganville, Wis.
- Wisconsin (Sauk City)—1, 1½, 2½, 3½—Wisconsin Farm Tractor Co., Sauk City, Wis.
- Witt-Will—1½, 2—Witt-Will Co., Inc., Washington, D. C.
- Wolverine—1, 1½, 2, 2½, 3½—American Commercial Car Co., Detroit, Mich.
- Yellow Cab—¾, 1½—Yellow Cab Mfg. Co., Chicago, Ill.
- Young—1, 2, 3½—The Young Motor Truck Co., Euclid, Ohio.

Motor Cars Operate on Rails in City and Interurban Passenger Service

For the first time in history, gasoline propelled cars have been put into city railway service to replace electric trolley cars. This installation has been made by the Manhattan City and Interurban Railway Company of Manhattan, Kansas, who recently scrapped their heavy electric cars and equipment and are now operating four FWD railway cars, manufactured by the Four Wheel Drive Auto Co., Clintonville, Wis.

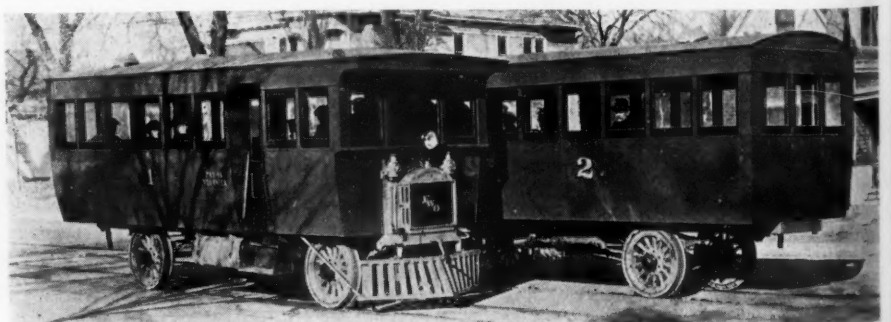
The excessive cost of operating the heavy electric cars for a patronage which has decreased considerably since the war, was the deciding reason which influenced officials of the Manhattan City and Interurban Railway Co. into buying lighter equipment. It cost them between forty and fifty cents per mile to operate electric cars and they give the public just as good service now at a cost of about 15c per mile. But they gained more than simply a reduction in operating costs by installing motor equipment; they reduced their number of employees, one man operating a car instead of two; they eliminated the expense involved in the operation of a power plant and three

sub-stations; they are able to operate their motor equipment with less noise and less annoyance to the public; they reduced their cost of maintaining their right of way, the new equipment being much lighter and less destructive to the rails than the heavy electric cars.

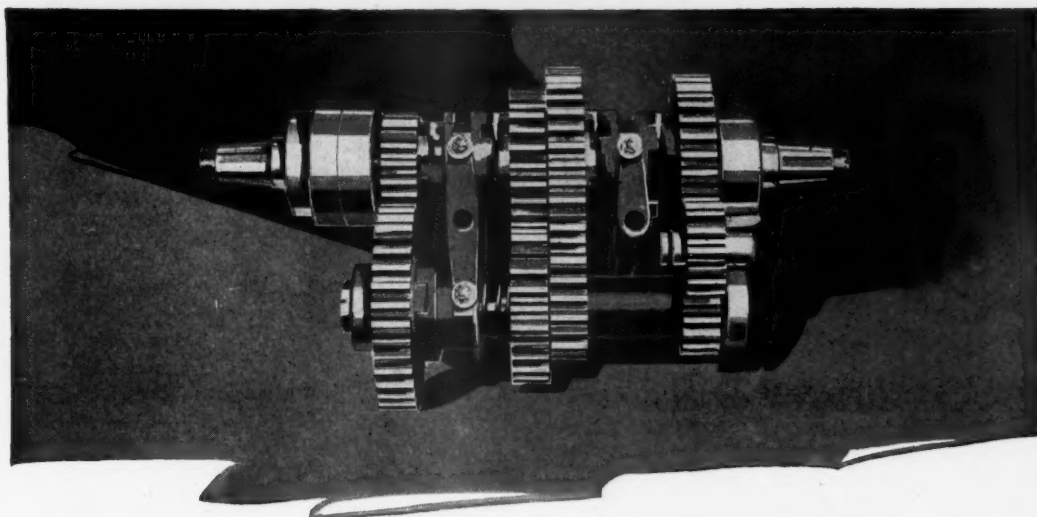
Each car provides a seating capacity of thirty-two persons and a space for baggage. The cars are well finished inside and afford much comfort to passengers. Some of the other features of the cars are as follows: 156-in. wheelbase; high speed reverse gears which enable the cars to go as fast in reverse as they will go forward; locomotive type "cow-catchers"; electric starting and lighting

devices; heating systems which utilize the heat from the motor exhaust; entrance and exit near the front of the car with the door operated by the driver. In addition to the rail cars they operate one bus on the highways between Junction City and Fort Riley as a feeder to their interurban line. This bus looks somewhat similar to the rail cars, having the same kind of body. The weight of the chassis in each case is 7200 lb. as compared to 60,000 lb., which is the weight of heavy and noisy electric cars.

Regarding the service given by their motor equipment and the cost of operating it, company officials state that the installation is a great success.



These Buses in City Railway Service Fit Attractively in the Residential Section


SKF


"Silence" In Transmission Is Largely Due To Good Bearings

THE deep-groove ball bearing—because of its remarkable accuracy, high carrying capacity and smooth running characteristics—is particularly suitable for transmissions.

Silent transmission is dependent on the maintenance of the original setting of the gears and the absence of undue wear on the gear teeth through the elimination of wear at the bear-

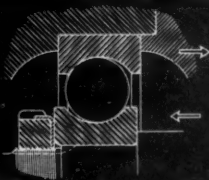
ings. The practical perfection of the grooves and the extreme sphericity of the balls in the deep-groove ball bearing, insure that lasting niceness of operation so essential to quiet running.

Our Engineering Department has accumulated a fund of valuable experience in solving the problems of "quietness". We shall be glad to place it at your disposal.

THE HESS-BRIGHT MANUFACTURING COMPANY

Supervised by **SKF** INDUSTRIES, INC., 165 Broadway, New York City

736



Hourly Price Reduction Program Draws Profits

WHAT may be considered a novel selling stunt, one that has a psychological appeal, was tried by a Hartford truck dealer recently to move his used trucks. It was a two days' sale at the show room and had for its punch an automatic price decreasing schedule, which came into effect each hour of the day. The sale began at eight o'clock in the morning with a fixed price on each truck, which price was reduced \$10 every hour until closing time at six.

A two-column, twelve inch deep advertisement, reproduced herewith, was run in the newspapers, and a striking sign displayed in the window of the showroom.

While this plan is not entirely new it created interest and was the means of bringing a large number of prospective buyers to the establishment. Contrary to what might be expected the buyers came early in the morning despite the fact that the price was cut hourly at \$10 per hour. It was, to a certain extent, a demonstration of psychology for the greater number of prospects hustled early to the show room to beat the other fellow to it. In other words the advertisement had the same effect on the prospect as does those dealing with standard articles at special sales. Few waited until the afternoon.

\$10.00 PER HOUR IS A GOOD SALARY ANOTHER BIG USED CAR SALE BY TABER

This sale will start at 8 a. m.,
Each used car in our stock will be \$10.00
cheaper at 9 o'clock than it was at 8 o'clock
and \$20.00 cheaper at 10 o'clock, and so on
until closing time at 6 p. m.

The prices to start with are very low, as can
be seen by the following list of bargains:

LIST OF TRUCKS

The longer you wait the cheaper they get—
unless some one beats you to it. The only
question for you to decide; how long you
can afford to wait.

The sale will continue all day Friday and
Saturday.

RUSSELL P. TABER, Inc.
128 Allyn Street
1½ Blocks From R. R. Station
"The House of Square Dealing"

The sale resulted in a number of trucks being moved at good prices for the list was high enough to care for any hourly reduction; that is, each truck was priced at about \$100 higher, and those sold in the morning brought better prices than would have obtained under conventional conditions. A large number of prospects were also obtained.

Lighting is provided by four large dome lights in roof.

Seats, fitted with ample springs, are crosswise on one side, with one long side-seat opposite. This makes it possible to keep the bus body within the proper width limits for street traffic and provides a wide aisle.

Signal buttons for passengers are placed conveniently, and ventilation is provided for by shutter windows fore and aft that may be opened at will.

Signal lights are mounted on the front of the bus, well up, for the benefit of passengers who wish to take the bus, that they may distinguish it from other cars approaching.

Alemite chassis lubrication is provided.

Will Oppose Highway Defacement

Vigorous protest against further marring the beauty of American highways and interfering with the safety of motor travel by obstructing the view of the tracks in the vicinity of grade crossings with large advertising signs, was voiced in a resolution adopted by the annual convention of the Asphalt Association at New York, the national organization of paving producers and contractors.

Bearing in mind a severe criticism of the dangerously narrow width of American roads uttered by Joseph R. Draney, president of the Association, in his annual address, the convention also adopted a resolution urging a minimum width for highways serving large cities of twenty-four feet so as to afford more room for the increasing traffic. "I have ridden over more dangerous roads in the vicinity of New York," said Mr. Draney, "than one will find, for instance, in the whole of England."

Railroads Use Motor Buses

Motor buses are being used by 32 electric railways in the eastern part of the United States, and motor buses with flanged wheels are being used by 29 short line steam railroads.

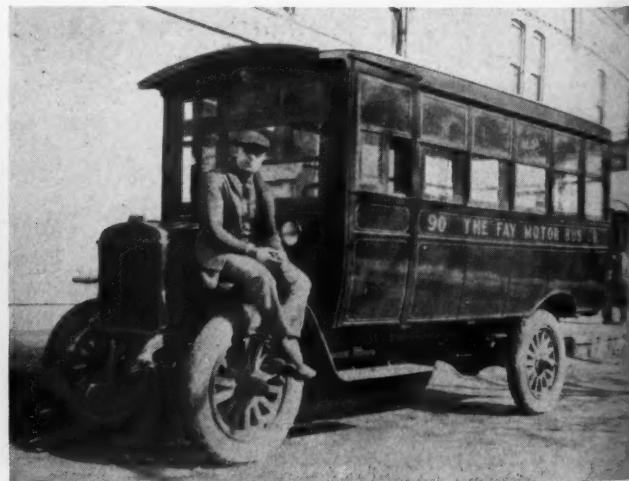
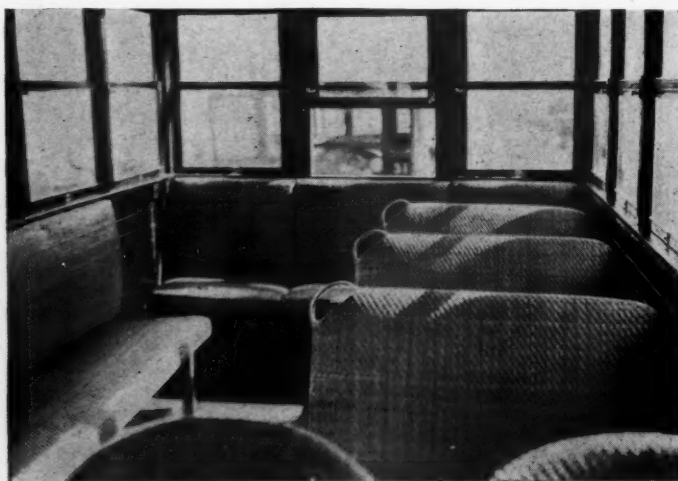
Fay Motor Bus Company Now Offering Buses

A MOTOR bus embodying all the features that have proved worth while during their long operation of bus lines has been placed on the market by the Fay Motor Bus Co., of Rockford, Ill. The bus is at present being built for the company by the Stroughton Wagon Co., of Stroughton, Wis., and is mounted on a Stroughton

truck chassis with a 140-inch wheelbase.

The body is of oak throughout, metal covered on the outside. The door is of the two-section, inward-folding type, operated by driver. Windows are of sliding type, to be opened in warm weather, and are provided with anti-rattlers.

For winter the bus is provided with heating system from engine exhaust.



Interior and Exterior Views of the New 140-in. Wheelbase Bus Now Being Introduced by the Fay Motor Bus Company, of Rockford, Illinois

RUGGLES TRUCKS

Prove Their Worth In Franchises Closed

Last month we told you sixty-five Ruggles franchises were closed in four months. This fast pace in national distribution is being maintained. The success of Ruggles Trucks is fully assured.

Less than a year old, the Ruggles organization is traveling like a veteran. Already Ruggles Trucks are nationally familiar.

Dealers of the very best type are closing territory. Big calibered business men are pinning their faith to Frank W. Ruggles.

Low price and high quality give the Ruggles Truck a big lead on all competition. These factors mean sales volume.

And in addition—the kind of a franchise you'd have if you wrote the terms yourself. The right discount, the right dealer helps, the right sales co-operation and service.

Full details forwarded to all responsible dealers. Learn how other business men are selling

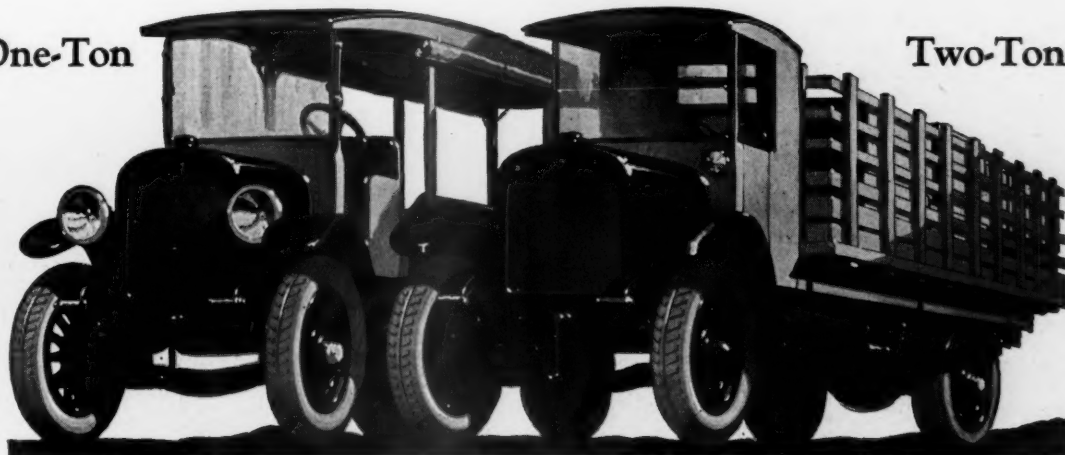


This Emblem
Stands for Quality

The World's Greatest Truck Value

RUGGLES MOTOR TRUCK COMPANY, Saginaw, Michigan
Canadian Factory, Ruggles Motor Truck Co., Ltd., London, Ont., Canada

One-Ton



Two-Ton

Metal and Rubber Markets

STEEL authorities are unanimous in observing that the effects of the coal strike are diminishing rather than increasing. Plants are becoming adjusted to the situation, as they are contracting for fuel from channels other than they ordinarily patronize. The present upward trend in prices is not attributable so much to the strike as to caution in case more serious developments in the industry took place.

Steel Products Prices

Per ton—Pittsburgh—			
Billets—Bessemer	\$29 50	a	30 00
Open hearth	29 50	a	30 00
Forgings	34 50	a	...
Sheet bars	32 00	a	35 00
Slabs	30 00	a	30 50

Sheets

The following prices are for 100-bundle lots and over, f.o.b. mill.

Blue Annealed Sheets—			
Pittsburgh (base)	\$2 40	a	...
Philadelphia	2 76	a	...
New York	2 78	a	...
Galvanized Sheets—			
Pittsburgh	4 15	a	...
New York	4 53	a	...

Finished Iron and Steel

Tank plates, Pittsburgh	\$1 50	a	1 60
Tank plates, New York	1 88	a	1 98
Steel bars, Pittsburgh	1 50	a	1 60
Steel bars, New York	1 88	a	1 98
Iron bars, ref'd, Pittsburgh	2 00	a	2 10

Iron and Steel at Pittsburgh

Skelp, grooved steel	\$1 50	a	...
Skelp, sheared steel	1 50	a	...
Strip steel, cold	3 50	a	3 65
Strip steel hot	2 00	a	...
Steel, smelting scrap	16 50	a	17 00

Miscellaneous

Following are the current prices for brass and bronze products:

Copper rolls	\$18 75	a	...
Copper bottoms	27 75	a	...
Copper rods, round	19 25	a	...
Brazed tubing, brass	23 00	a	...
Brazed tubing, bronze	28 00	a	...

Antimony

The market continues firm, with a moderate demand from consumers as well as operators.

Manganese

The market continues firm. Brazilian manganese ore is offered now at 27c. This increase is mainly due to the higher freight rates ruling everywhere.

Rubber Continues Easy

*Amber No. 1	16	a	...
Para—Up-river, fine	19	a	...
*Up-river, coarse	14	a	...
*Island, fine	18	a	...
Island, coarse	9½	a	...
Cameta	9½	a	...
*Centrals—Corinto	10	a	...
*Esmeralda .....	...	a	...
*Mexican scrap	9½	a	...
*Guayule, wet	13	a	...
*Guayule, dry	26	a	...
*Balata, block, Ciudad	55	a	...
*Balata, block, Colombian	42	a	...
*Balata, Panama	40	a	...
*Benguella, No. 2	7	a	9
*Kassal, prime black	14	a	...
*Kassal, prime red	10	a	12

*Nominal

Scrap Rubber

Prices are nominally unchanged in the absence of demand of any consequence.

Inner tubes, No. 1	3½	a	...
Inner tubes, No. 2	2¾	a	...
Tires—Automobile	¾	a	¾

International Proves Farmers' Return to Prosperity

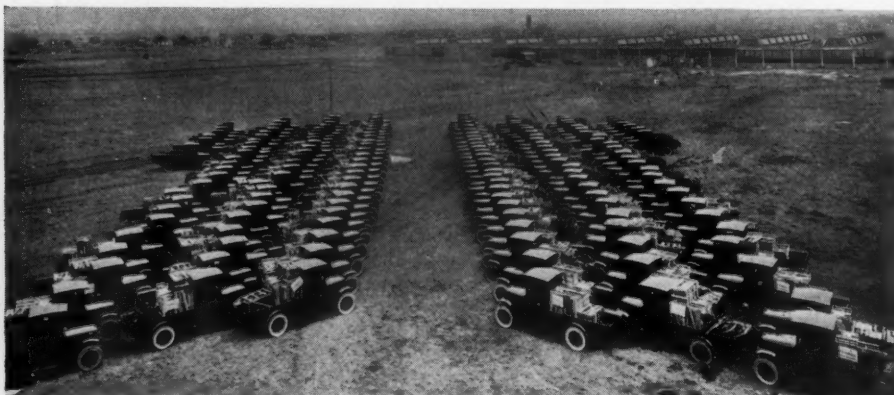
ONE of the largest automotive and farm machine deliveries ever consummated was recently made by the St. Cloud, Minn., Branch of the International Harvester Co. The event was of such significance to the business interests of central and northern Minnesota that the St. Cloud Chamber of Commerce declared a holiday.

Before leaving, the dealers formed their new red trucks in a line almost two miles long and paraded the principal streets of the city.

While the St. Cloud Branch led the

U. S. in the total number of Red Sales and Service trucks sold to dealers, branches at Boston, Denver, Kansas City, Fargo, Albany, Aberdeen and Harrisburg were not very far behind and at the remaining 84 branch houses the demand among McCormick-Deering dealers for "Red Baby" trucks has been equally as good.

The St. Cloud Daily Times in an editorial under the heading "Telling the Good News" says, "Here in the St. Cloud territory in central Minnesota there is a great per capita purchasing power. This was



"Red Baby" Trucks Grouped by the Dealers of the St. Cloud, Minn., Branch of the International Harvester Company in a Recent Highest Sales Celebration

demonstrated by the delivery today at one time of \$500,000 in farm operating and automotive equipment."

This is only one of the many examples of the reawakening of agriculture—it is proof positive that after all is said and done that agriculture is not only the oldest but it is the backbone of the industries of the world. We all prosper only in the same measure that the farmer prospers. To serve the farmer and make his burden lighter should be the object of every thinking man in this country. The farm implement and automotive dealers stand close to the farmer in this respect and they will prosper in the same measure that they endeavor to serve him.

The inauguration of this better service marks a new departure and advance in the implement industry. The dealers are broadening their usefulness by carrying salesmanship and service to the farmer. Their trucks are symbols of business and service, efficient helpers that will lead to wider use of up-to-date farm operating equipment.

Statement of Ownership, Management, Circulation, Etc.

Required by Act of Congress of August 24, 1912

of COMMERCIAL CAR JOURNAL, published monthly at Phila., Pa. for April 1, 1922

State of Pennsylvania
County of Philadelphia, ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared James Artman, who, having been duly sworn according to law, deposes and says that he is the Editor of the COMMERCIAL CAR JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication, for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

- That the names and addresses of the publisher, editor, managing editor and business manager are:
Publisher, CHILTON COMPANY, 49th and Market Sts., Philadelphia, Pa.
Editor, James Artman, 4538 Chestnut St., Philadelphia, Pa.
Managing Editor, Albert G. Metz, So. Ardmore, Pa.
Business Manager, C. A. Musselman, Merion, Pa.
- That the owners are:
James Artman, 4538 Chestnut St., Philadelphia, Pa.
George H. Buzby, Wellington Apartments, 19th and Walnut Sts., Philadelphia, Pa.
C. A. Musselman, Merion, Pa.
A. H. Vaux, Penllyn, Pa.
- That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.
- That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders, who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and that this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

JAMES ARTMAN, Editor.
Sworn and subscribed before me this 20th day of March, 1922.

(Seal) HARRY SMITH.
(My commission expires March 7, 1925.)

How This Rolled Steel Wheel Qualifies for Service on Your Trucks

It is strong

Bethlehem Rolled Steel Truck Wheels have the strength of rolled steel—strength far in excess of service requirements. They have the stamina and ruggedness to stand up under the violent jolts a truck receives in the most severe service.

It is durable

These wheels are built to outlive the truck. Their ability to endure years of hard service has been repeatedly demonstrated in a series of tests, both by ourselves and by truck manufacturers, under conditions of actual service and extending over several years.

It is resilient

The wheels of a truck are not expected to fulfill the function of the springs. Yet, most truck builders agree that some resiliency is desirable in truck wheels. Rolled steel is invariably chosen for a structure that requires great strength, plus a tendency to "give" under severe stresses, and it is ideally adapted as a material for truck wheels.

It has light weight

Rolled steel combines great strength with lightness. The light weight of Bethlehem Rolled Steel Truck Wheels effects a marked reduction in the un-

sprung weight of the truck; and less unsprung weight means less wear and tear on every part of the truck—and savings in repair bills.

It is the product of one organization

Every step in the production of this wheel is carried out by the Bethlehem organization. Every resource of the Bethlehem organization is on call to maintain the Bethlehem Rolled Steel Truck Wheel at a standard that will satisfy the most exacting requirements of truck builders—and that will meet every demand made by the users of their trucks.

It is free from flaws

One advantage peculiar to this method of wheel building is that the material can be freely inspected at every stage of the process. This easy inspection makes it certain that every Bethlehem Rolled Steel Truck Wheel placed in service is free from hidden flaws and defects of any kind.

It has exceptional uniformity

Three-fourths of the operations involved in building these wheels are performed on large power and hydraulic presses. This, plus the fact that the

wheel structure is formed by dies, insures that every Bethlehem Rolled Steel Truck Wheel is true and conforms rigidly to dimensions.

It has an attractive selling price

The process by which Bethlehem Rolled Steel Truck Wheels are made is continuous and progressive, and lends itself ideally to quantity production. The economies of quantity production, plus other economies inherent in the manufacturing process, make it possible to supply this wheel to truck builders at an exceptionally attractive selling price.

Send for Catalog RC

If you are interested in the truck wheel question, from the point of view of either fleet owner, truck dealer or truck manufacturer, we shall be glad to send you a copy of Catalog RC, which gives complete details of the wheel and tells an interesting story of its manufacture.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Sales Offices in the Following Cities:

New York
Boston

Philadelphia
Baltimore

Washington
Atlanta

Pittsburgh
Cleveland

Detroit
Chicago

St. Louis
San Francisco



BETHLEHEM

ROLLED STEEL TRUCK WHEELS

⌘ THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON ⌘
AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION ⌘

Is Your Association Selling Service to the Owner?

SERVICE associations have accomplished much since the movement was inaugurated in New York, but outside of the dealer trade mediums there has been little publicity given the objects for which the service men are striving. The newspapers have given little if any recognition in the large cities. And they claim to function for the owner.

While the service manager, and his service salesman, put forward their best foot in selling the owner—when he comes to the station—it is interesting to note that at least one service association has not overlooked the importance of selling the association to the owner. The Automotive Service Association of Syracuse, N. Y., which was organized in 1920, and includes in its membership truck, passenger car, battery, electric, tire, radiator, etc., dealers and repairs shops, compiled a neatly printed folder which was distributed at show held in that city.

On the frontispiece was inscribed, "TO THE BOSS," and in smaller type, "What the Automotive Service Association of Syracuse Means to Every Owner." The following are paragraphs extracted from this folder:

"It is generally conceded that the importance of service has reached a point where it is the cornerstone upon which the future progress of our industry will rest. That you, Mr. Car Owner, are 'The Boss,' and the man we really work for. You are the man to whom we owe our jobs individually and collectively, and not to the general manager, sales manager, nor any of the officers of our concerns. You are the man who pays us our salaries and

tells us we are doing good work or poor work and, in fact, whether we will work at all.

Reducing Owners' Bills

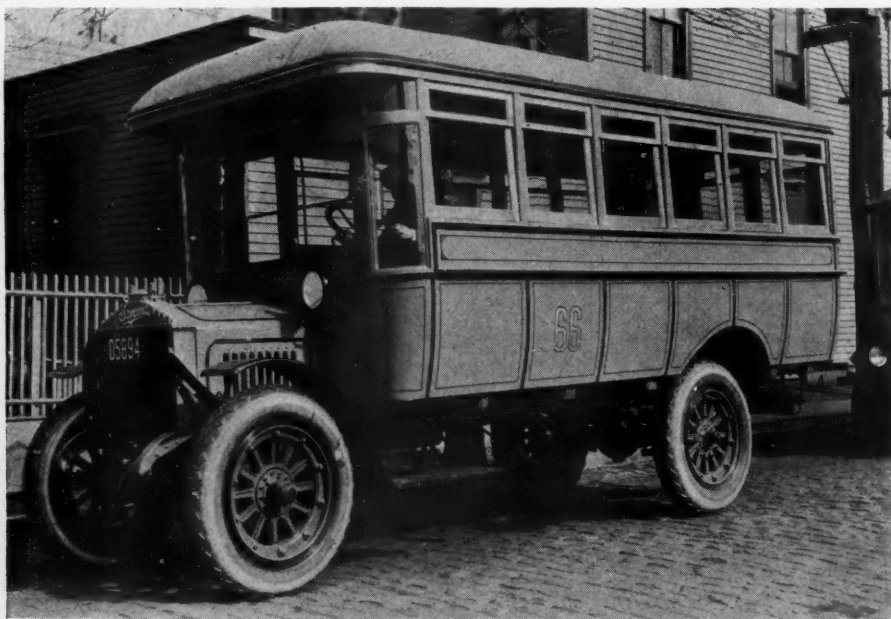
"This association was started for the purpose of doing everything possible to reduce the cost and improve the quality of the service to you and to facilitate co-operation between you and the automotive industry, through efficient service.

"The results in Syracuse territory and elsewhere have proven that service association meetings ARE good for service and that they have accomplished a vast amount to the benefit of all concerned. The problems are, however, of great number, and no one appreciates more than the service executive that the road to the most satisfactory service is a long and hard one, and that there is a long way to go. We must constantly strive to please you in our business relations and to give you the best possible service and a full dollar's value for every dollar expended."

The objects of the association, meetings, etc., were briefly explained. A large



This is a View of a Three and a Half Ton Standard Truck Equipped With the Type of Body Most Suitable for the Transportation of Boxed Products and General Merchandise. In This Particular Instance Plumbing Material for Refitting the Boats for Passenger Service on the Great Lakes Has Been Hauled and is Being Unloaded at the Boat's Edge.



Showing One of the Several Buses Operated on Bergen Ave., Jersey City. The Body is a 17-Passenger Burnstein Mounted on a Standard Chassis

number of the circulars were distributed and accomplished the purpose for which they were intended—i. e., selling the owner.

Detroit Trailer Data

In a recent bulletin issued by the Detroit Trailer Co., Detroit, Mich., entitled, Trailer Talk on Detroit Motor Truck Semi-Trailers, is outlined a complete list of this company's products in the form of illustrations and specifications together with trailer data, facts and figures and action illustrations, depicting trailer outfits under various conditions. Of particular interest is the center spread, a blueprint reproduction, which graphically presents illuminating operating cost comparisons under three different systems of transportation. In it differences in the ultimate cost per ton-mile when using three five-ton trucks, one five-ton truck and two five-ton trailers, and one fifteen-ton tractor and one semi-trailer, are very clearly brought out. In addition daily operating costs and fixed daily costs under each of the three systems is analyzed, showing exactly where the differences in costs occur.

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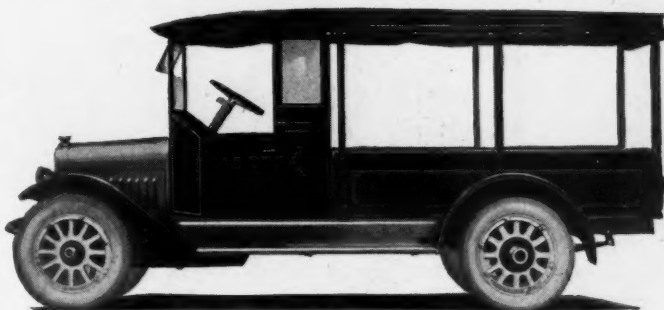
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